



POST-BALI ISSUES IN AGRICULTURAL TRADE: A SYNTHESIS

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TABLE OF CONTENTS

POST-BALI ISSUES IN AGRICULTURAL TRADE: A SYNTHESIS	4
Executive Summary	4
1. Introduction	5
2. Market Situation and Outlook	6
2.1 Price Level.....	6
2.2 Volatility.....	9
3. Evolution of the Policy Landscape	10
3.1 Producer Support	10
3.2 Import Measures	14
3.3 Export Measures	17
3.4 How Restrictive Are WTO Disciplines?	20
4. Market and Trade Impacts of Agricultural Policies.....	22
4.1 Production and Trade Impacts of Reforming Domestic Support through Decoupling	23
4.2 Trade Impacts of Improving Market Access	26
4.3 Trade Impacts of Reducing Export Subsidies and Equivalent Measures	27
4.4 Welfare Impacts of Agricultural Policy Reform	29
4.5 Impacts of Export Restrictions	29
4.6 Impacts of Non-Tariff Measures	30
4.7 Impacts of Stockholding for Price Stabilisation	31
5. Achieving Optimal Policy Performance	33
5.1 Policy Insights Generated by OECD	33
5.2 The World Has Changed – Are Past Findings Still Relevant?	39
6. Implications for Agricultural Trade Negotiations Post-Bali.....	42
7. Conclusions	46
REFERENCES	48

Figures

Figure 2.1. International Market Prices of Cereals in Real Terms, 1971-2023	7
Figure 2.2. Price Projections for Selected Agricultural Commodities for the Average of Years 2014 to 2023	8
Figure 3.1. Producer Support Estimate as a Share of Gross Farm Revenue, 1995-2023.....	11
Figure 3.2. Shares of Country Groups in Aggregate Producer Support of All 47 Countries Covered in the OECD’s M&E.....	11
Figure 3.3. Change of %PSE and Producer NPC from 2002-07 to 2012	12
Figure 3.4. Share of Potentially Most Distorting Support in All Producer Support, 2002-07 and 2012 ...	13
Figure 3.5. Bound and MFN Applied Tariffs for Agricultural Products, 2012	14
Figure 3.6. Maximum Duty (MFN Applied) Among all Tariff Lines for Agricultural Products, 2012	15
Figure 3.7. Change of Average Tariffs (MFN Applied) for Agricultural Products from 2007 to 2012	16
Figure 3.8. Export Measures Affecting Agricultural Products: Number of Measures Taken, 2007 to 2011	20

Figure 4.1. Production Impact Ratios of Alternative Agricultural Policies: Highest and
Lowest Results of Various OECD Studies on Decoupling25

Figure 6.1. Ranges of Reduction Rates for Agricultural Tariffs in Developed Countries
Suggested in the Successive Draft Modalities of 2006, 2007 and 200844

POST-BALI ISSUES IN AGRICULTURAL TRADE: A SYNTHESIS¹

Executive Summary

After the unsuccessful attempt in 2008 at agreeing on modalities for agriculture in the Doha Round of WTO negotiations, there was essentially a hiatus in the talks and little was achieved until the Bali Ministerial of the WTO in December of 2013. Based on the progress made at Bali, more dynamic negotiations resumed again in the first half of 2014. One of the issues addressed was whether the draft modalities tabled in 2008 ("Rev.4") could still serve as a useful reference given that the conditions in global agriculture had changed significantly since then. Against this background the present paper looks at the changes that have taken place in recent years in market conditions for agricultural products and in agricultural policies of major countries. After reviewing major results of OECD work regarding market and trade impacts of agricultural policies and concerning the performance of alternative agricultural policies the paper then discusses whether these findings require updating or modification in the light of the changed conditions in global agriculture.

On international markets for agricultural commodities recent years have not only seen dramatic price spikes, but also a step increase in the level of prices, in the order of magnitude of one third. There is also some likelihood that markets may remain quite volatile in the years to come. In the policy domain, farm support has declined in the OECD area, and there has also been some decrease in the share of support that is provided through the most distorting policies. Policy developments among major emerging economies, though, pointed in the opposite direction, with rising support levels and more distortionary policy structures. Relative to bindings and commitments accepted in the WTO, there is significant 'binding overhang' in most countries in all three areas covered by the Agreement on Agriculture, i.e. market access, export competition and domestic support. As a result of the changes in global agriculture that have taken place in recent years, the magnitude of that 'binding overhang' has further increased.

The implications of these developments for the post-Bali negotiations on agriculture are that the rule changes and reduction parameters suggested in the 2008 draft modalities should now be more easily acceptable than they may have been in 2008. In fact, larger reductions may be needed in order to squeeze enough water out of the commitments. Two issues that require more attention than they had received in the negotiations up to 2008 are export restrictions and risk management.

Most of the OECD's findings regarding well performing agricultural policies have not only stood the test of times. They also continue to apply under the changed conditions in global agriculture. What might be useful is a somewhat strengthened emphasis on some issues that were already addressed in the past which, though, may have become even more important under the conditions now prevailing in global agriculture. Two examples may illustrate this point. First, biofuel support policies and their impacts on global consumption of agricultural commodities have become even more problematic in times of generally high prices on agricultural markets. Second, policies to support risk management have not only attracted

1. This paper has been prepared for the OECD Trade and Agriculture Directorate. The views expressed are those of the author and do not necessarily reflect those of the OECD or OECD member country governments.

rising attention in a more volatile market environment. It also appears to be the case that the important findings OECD research on risk management has generated have not yet sufficiently found their way into actual policy making. Perhaps the case can be made that OECD research and policy dialogue in this area is now as important, and should hence receive as much attention, as work on decoupling did in the last decade or so.

New developments also raise new challenges for policy research. In this paper, a number of issues are suggested that might benefit from OECD work.

1. Introduction

1. Given the importance of trade as an economic activity, and of trade policy as a cornerstone of economic policy making, OECD has always placed much emphasis on analysing trends in international trade, and on investigating developments in trade policies both at the national level and in the multilateral framework of the GATT/WTO. In that context, agricultural trade has required particular attention. Though the share of food and agricultural products in global trade is small and declining, agricultural trade continues to play an important role for both overall economic development and food security in many developing and emerging economies. Moreover, in multilateral trade negotiations, tensions over agriculture have time and again caused particular difficulties and retarded progress in other sectors.

2. Over the years, OECD analysis has contributed significantly to identifying the nature of challenges faced in global agricultural trade, to investigating the trade impacts of alternative agricultural policies, and to clarifying options for improving policy performance and reducing impediments to well-functioning international markets. OECD work in this area has, as is often acknowledged, for example made an important contribution to preparing the intellectual and political ground for successful negotiations on agriculture in the Uruguay Round of the GATT. The Agreement on Agriculture (AoA) concluded in the Uruguay Round was a milestone in the history of multilateral efforts to create operationally effective disciplines governing agricultural trade. It established firm rules and clearly specified quantitative reduction commitments. It also called for another round of negotiations, to deal with the "continuation of the reform process". There was hope that a good part of the rather large amount of water the Uruguay Round results had left in the new disciplines would then be wrung out of the reduction commitments, and in the end agriculture could perhaps one day be integrated fully into the WTO regime, without any sectoral exceptions.

3. It turned out that these agricultural negotiations mandated in the Agreement on Agriculture could be integrated into the Doha Round – where agriculture though began to cause tensions again right from the start. It took a major effort to agree on the precise wording of the objectives for agriculture in the Work Program for the new round. But the real difficulties began when the negotiations turned to the details of new modalities for agriculture. A culmination point was reached in July 2008 when time appeared increasingly ripe to reach closure on the modalities for future disciplines and commitments, in an informal meeting of the WTO's Trade Negotiations Committee at Geneva, with many countries represented at ministerial level. However, it proved impossible to reach a compromise on a number of elements in the field of agriculture. Though agreement on most other issues was in sight already, the mini-ministerial collapsed over the impasse in agriculture. The possibility of calling a WTO ministerial in December 2008 was explored, in the hope that it might finalize the modalities. The chairmen of the negotiations on agriculture and on non-agricultural market access issued revised texts of draft modalities, reflecting results of both the July mini-ministerial and subsequent negotiations. However, gaps among negotiating positions remained so wide that risk of yet another failure appeared too high, and the ministerial was postponed.

4. In the absence of any significant further progress in the Doha negotiations, the draft modalities of December 2008 documented for a long time what had, or had not, been achieved in the Doha negotiations

on agriculture. The document containing the draft modalities for commitments in agriculture tabled by the then Chair of the agricultural negotiating group in December 2008 is often referred to as "Rev.4", in reference to the number of the respective WTO document (TN/AG/W/4/Rev.4). Rev.4 is extensive and highly detailed, it specifies a large number of qualitative provisions and contains all the quantitative parameters needed to define reduction commitments regarding market access, domestic support and export competition.

5. OECD has done considerable work in analysing elements that were considered by WTO members in their negotiations on agriculture up to the time Rev.4 was tabled in 2008. After that, negotiations made little, if any, progress. As a result of the Bali Ministerial and the decisions taken there, however, a new dynamic emerged and negotiations became more intensive again. One of the questions considered by negotiators in the first half of 2014 was to what extent the conditions in global agriculture and policies affecting it have changed after Rev.4 was drafted. Against this background this paper aims at providing information on how the situation has changed since 2008, which insights generated by work done in OECD up to 2008 may be particularly relevant in informing the current negotiations, and where there may be a need for extending the analysis. Section 2 takes a look at developments on international markets for agricultural products. The evolution of the policy landscape is considered in Section 3, as well as how it relates to commitments under the AoA and potential future commitments along the lines of Rev.4. Section 4 reviews OECD work on market and trade impacts of agricultural policies that is relevant in this context, while implications for achieving optimal policy performance are briefly summarized in Section 5. Some possible implications for the post-Bali negotiations on agriculture are suggested in Section 6. A few issues that might benefit from future analysis are proposed in Section 7.

2. Market Situation and Outlook

2.1 Price Level

6. International markets for agricultural commodities are notoriously volatile.² Most of that volatility originates on the supply side: output depends on the vagaries of weather and other natural factors, varying from year to year. Cyclical swings of output, reflecting lagged response of supply to price changes, can inject an additional degree of volatility into agricultural markets. As it happens, such output fluctuations on agricultural markets hit a demand that does not respond much to price variations. Hence prices have to change rather much in order to restore market balance. International trade could, in principle, even out much of that intrinsic volatility, given that weather variations and other supply shocks are typically regional phenomena. However, the balancing potential of trade is diminished as many governments have a tendency to try and stabilize their domestic markets through various types of policy intervention. In effect such policies export instability to international markets and prevent fluctuations on these markets from being absorbed in national markets. In consequence, international markets tend to be not less, but more volatile than most domestic markets for agricultural commodities.

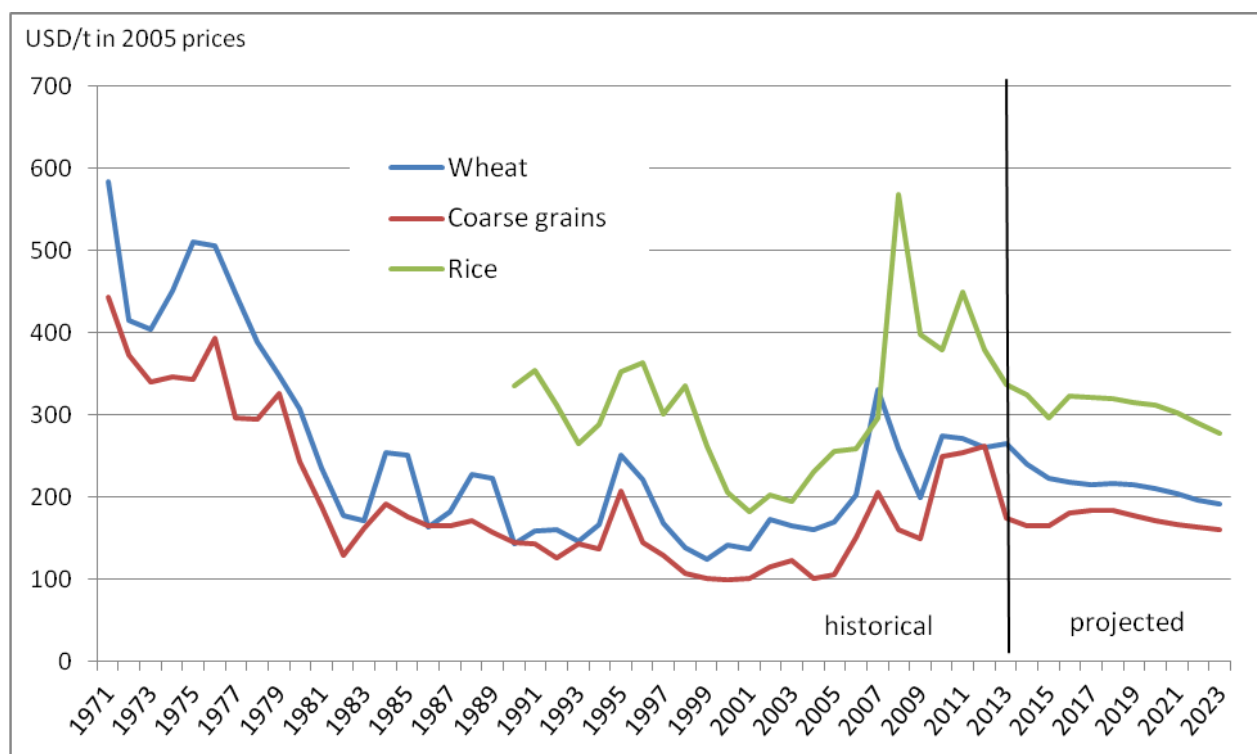
7. In 'normal' periods, volatility on agricultural commodity markets is essentially symmetric: prices are sometimes above and sometimes below their trend, and the highs are more or less matched by corresponding lows. Once in a while, however, such 'normal' (though pronounced) volatility is interrupted by an extreme price spike, usually accompanied by particularly high volatility. This typical phenomenon of asymmetric price movements (or "skew") on agricultural (and other) commodity markets is closely related to stock changes. For storable commodities, stock variations can contribute to evening out some part of market volatility. However, once stocks are depleted they can no longer compensate for a decline of output. In that situation an output shortfall can drive up prices to very high levels. Uncertainty and

2. The nature, determinants and policy implications of volatility on agricultural commodity markets are discussed more fully in Tangermann (2011) and the literature referenced there.

nervousness of market participants can then also add to volatility. If panic spreads to governments and some of them resort to ad hoc policy interventions such as export restrictions, price spikes and volatility are amplified even further.

8. Most of the time such episodes of extreme price spikes don't last very long. Output recovers, stocks are replenished and prices return to their usual levels. This was, for example, the nature of the pronounced price spike on international cereals markets in the mid-1970s. After the extreme price spike was over, markets calmed down again and continued their secular decline in real terms (Figure 2.1). More recently, in 2007 and subsequent years the world has experienced another extreme price spike on international markets for cereals. This time, however, the subsequent development of markets differed notably from the usual episode of a transitory price spike. After the original extreme price explosion was over, prices did not revert to their pre-spike level. On the contrary, the first price spike was followed by further peaks, prices continued to exhibit much volatility, and even though they declined again from their extremely high levels of 2007/08, prices remained at a level significantly higher than before 2007, even in real terms (Figure 2.1).

Figure 2.1. International Market Prices of Cereals in Real Terms, 1971-2023

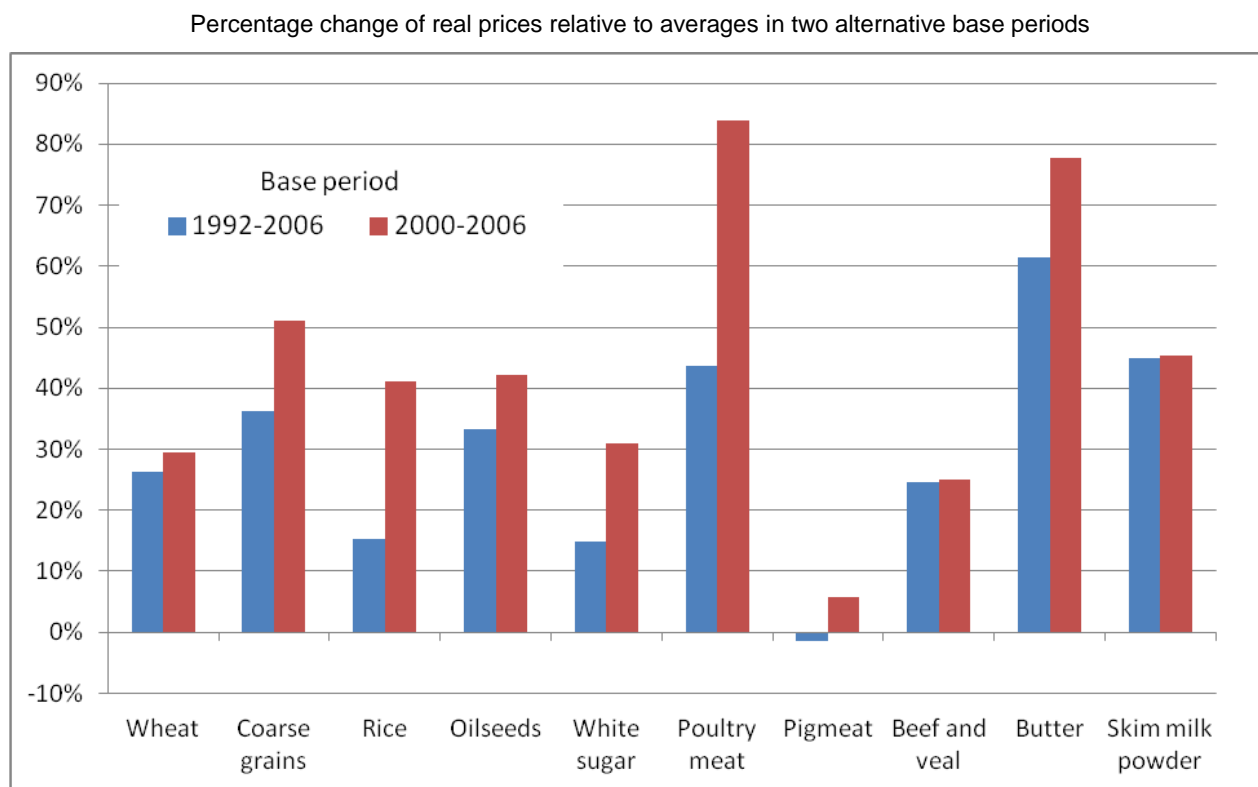


Source: Author's calculations based on database of OECD-FAO (2014).

9. Market projections for the coming years differ somewhat between authors and institutions. But there is general agreement that prices of most agricultural commodities are likely to remain at a high level for the foreseeable future. The OECD-FAO Outlook projects real prices of cereals to decline again slightly over the whole of the 2014-2023 period, but even at the end of that projection period they would still be considerably higher than before the 2007-08 price spike (Figure 2.1). Real prices for most other agricultural commodities are also projected to attain a level significantly above that known in the past. Prices for the average of the ten year period 2014-2024 are projected to be higher than those prevailing on average in the 1992-2006 period by some 15% to 35% in real terms for cereals, oilseeds and sugar, by 40%

to 60% for poultry meat and dairy products, and by 25% for beef/veal (Figure 2.2). Only pigmeat prices are projected to remain slightly below their 1992-2006 average. Relative to the base period 2000 to 2006, which does not include the above-trend prices of the mid-1990s, the projected increase of real prices in the coming ten year period is even larger, for some products as much as 50% or even 80% (Figure 2.2).

Figure 2.2. Price Projections for Selected Agricultural Commodities for the Average of Years 2014 to 2023



Source: Author's calculations based on database of OECD-FAO (2014).

10. It thus appears that in 2007 and subsequent years the world has not only experienced an extreme price spike and hefty volatility, but also a notable step increase in the price level of agricultural commodities.³ This is a remarkable departure from past trends on world markets for agricultural commodities. Real prices for agricultural commodities have trended downwards for a long time.⁴ Around the year 2000 that downward trend has slowed down, and then it was interrupted by what appears to have been an upward step in the price level, an increase in the order of magnitude, roughly speaking, of one third.⁵ A number of factors are cited that may explain that step increase. A major influence is attributed to

3. In recent editions of the OECD-FAO Outlook, average real prices over the projection period are compared to the average of the two year and ten year periods in the immediate past (see figures 1.15 in the 2014 Outlook and 1.9 in the 2013 Outlook). As these base periods include the peak prices of 2007/08 the step increase in the price level that began in 2007 is less visible in that comparison.

4. For a statistical analysis of the long term movement of commodity prices, see Jacks (2013).

5. It would appear likely that in the medium to longer term the price ratios among many agricultural commodities, in particular between the different crops and between cereals and cereal-based livestock products, move in a less divergent way than implicit in projections represented in Figure 2.2, as substitution and complementarity relationships tend to bring about similar price trends.

high and rising energy prices and the resulting cost push in world agriculture, both through direct energy consumption (e.g. tractor fuel) and through their impact on other input prices, in particular fertilizer. The most recent OECD-FAO Outlook projects the price of crude oil on average over the 2014-2023 to be above that in the 2000 to 2006 period by about 160% in real terms, and the price of fertilizer by nearly 70%. Another factor on the supply side is what appears to be a slowdown in yield growth and productivity improvement on a global scale. Moreover, resource constraints, specifically regarding the availability of water and land, become increasingly felt. On the demand side, food consumption continues to be stimulated by population growth and rising incomes, in particular in emerging economies. Growing use of agricultural commodities as feedstocks for the production of biofuels is also contributing to demand expansion. All of these factors appear to be of lasting nature for the foreseeable future. Thus it seems that the step increase in the level of real agricultural commodity prices that has occurred after 2006 is not just a transitory short term phenomenon.

2.2 Volatility

11. The future of volatility on world markets of agricultural products is more difficult to project. Fundamentally, the degree of volatility depends on two sets of conditions. First, the incidence of volatility results from the frequency and size of shocks, most of which originate from the supply side. Second, with a given shock the size of the price change triggered depends on the ease by which markets can adapt, which reflects factors such as price elasticities of demand and supply, and the availability of stocks.

12. The occurrence of shocks is essentially impossible to predict, nearly by definition as shocks are deviations from what was expected. However, there are reasons to assume that the frequency and size of shocks in global agricultural output may be higher in the future than experienced in past decades, and possibly rise even more. In particular, ongoing climate change is expected to be accompanied by increasingly frequent and violent occurrences of extreme weather events (storms, flooding, drought etc.), resulting in growing output variability. This may be exacerbated by the fact that the need to expand global food output means that agricultural production is increasingly moving into marginal areas which are particularly susceptible to yield variations. New shocks enter the agricultural system as energy prices become an increasingly important element of the cost structure of the global farming industry, not the least because further expansion of global agricultural output will depend on growing use of fertilizer. Energy prices and their fluctuations are also likely to inject an increasingly important element of volatility on the demand side of agriculture as the consumption of bioenergy, and hence of agricultural feedstocks, will depend more and more on the price-driven profitability of substituting biofuels for fossil energy.

13. At the same time the flexibility of markets in adapting to output variations may have a tendency to decline. As incomes rise on a global scale, food demand becomes less and less responsive to price changes. Where consumption of biofuels is driven by government policies through fixed mandates the price responsiveness of that component of demand for agricultural products is essentially zero. As global demand for agricultural products pushes increasingly against the frontier of the production capacity of world agriculture, markets become progressively tight and hence less able to adapt to shocks. Stock levels of cereals are projected to recover somewhat from their very low levels in the recent episode of price spikes and volatility, but may tend to remain low relative to consumption as global output has difficulties keeping pace with the growth of demand. Macro-economic conditions may also remain somewhat fragile as high government debts and low interest rates continue to reflect the emergency actions pursued in fighting first the global financial crisis and then the European currency crisis. All this would suggest that, in addition to a higher level of prices, the future may also hold larger volatility on agricultural markets.

3. Evolution of the Policy Landscape

14. While the situation on international markets has changed noticeably in the recent past, agricultural policies have also evolved, partly in response to the changes in market conditions, but also reflecting broader considerations regarding policy pursuit. The overall picture of this evolution of the policy landscape is best provided by information regarding changes in estimated producer support. Additional specific insights can be derived from a look at the development of policy settings in the domains of domestic support, import measures and instruments affecting exports.

3.1 *Producer Support*

15. In its annual "Agricultural Policy Monitoring and Evaluation" (M&E) the OECD now provides estimates of producer support for a total of 47 countries. Included are the 34 members of the OECD, six non-OECD member countries of the EU and seven emerging economies.⁶ On aggregate, these 47 countries cover almost 80% of value added in world agriculture (OECD, 2014, p. 24) and thus provide a good impression of the global picture. It should, therefore, be useful to take a look at developments in these countries while the DDA negotiations were going on, comparing the most recent M&E data, for 2012, with the average of the six year period 2002-2007, the period before the December 2008 draft modalities were tabled. Over that time, the Producer Support Estimate (PSE) for the aggregate of all 47 countries included in the OECD's M&E has grown by nearly 60%, from USD 308 billion in 2002-07 to USD 486 billion in 2012.⁷ Yet, during the same period, gross farm receipts (inclusive of support) on aggregate in these 47 grew even more rapidly, by nearly 90%. Thus the share of producer support in gross farm receipts, i.e. the average %PSE of the aggregate of the 47 countries declined from 20.3% in 2002-07 to 16.7% in 2012. The decline began in 2007 and continued in 2008, after which the support rate increased again somewhat, suggesting that much of the decline was a result of the rise of international market prices in 2007-08 (Figure 3.1).

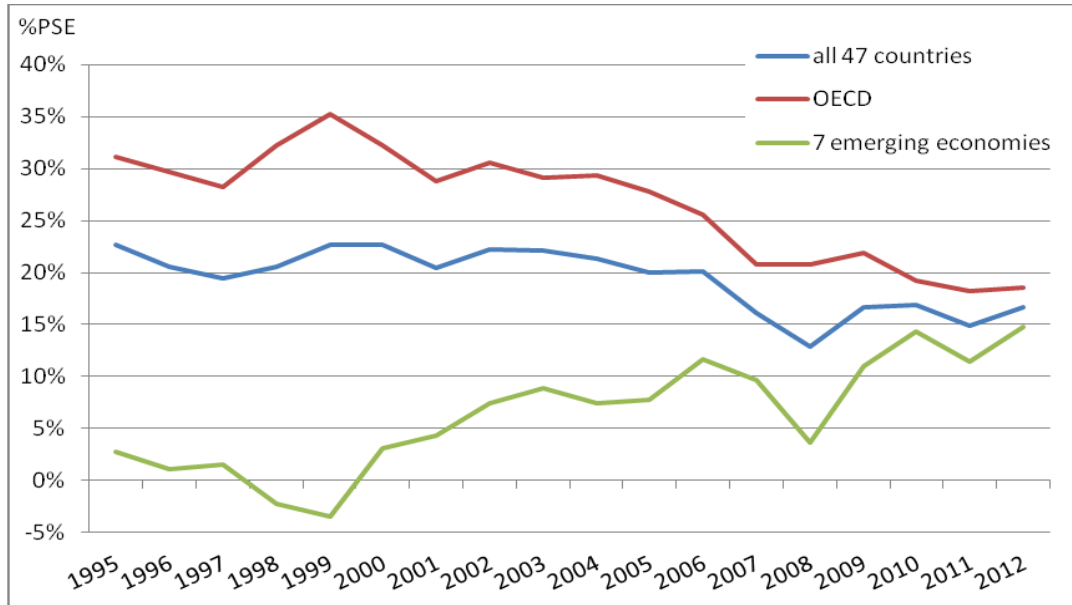
16. Within this aggregate the evolution of producer support in different country groups has diverged notably. In the OECD area⁸ the %PSE has declined significantly since the beginning of the century, while the %PSE for the aggregate of the emerging economies included has increased equally significantly. In fact, as it happens in both country groups the %PSE has changed by about 15 percentage points since around the year 2000 – but in the OECD area downward and in the emerging economies group upward (Figure 3.1). As a result the shares of these country groups in aggregate producer support for the 47 countries covered in the M&E have shifted fundamentally. While the group of seven emerging economies made up for no more than 17% of the total in 2002-07, its share had grown to 45% by 2012 (Figure 3.2).

6. The seven emerging economies included in the OECD's M&E are Brazil, China, Indonesia, Kazakhstan, the Russian Federation, South Africa and Ukraine.

7. All results presented here were calculated from data in the OECD's PSE data base.

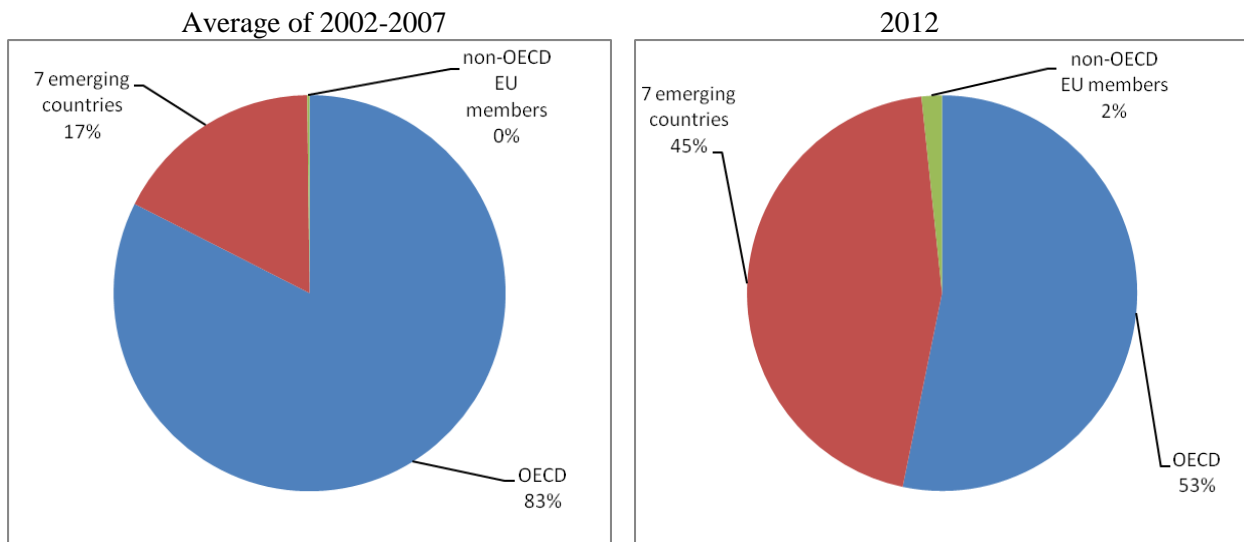
8. Note that the OECD area does not include the six non-OECD member countries of the EU, even though they are also covered by the EU's Common Agricultural Policy.

Figure 3.1. Producer Support Estimate as a Share of Gross Farm Revenue, 1995-2023



Source: Author's calculations based on PSE database of OECD.

Figure 3.2. Shares of Country Groups in Aggregate Producer Support of All 47 Countries Covered in the OECD's M&E



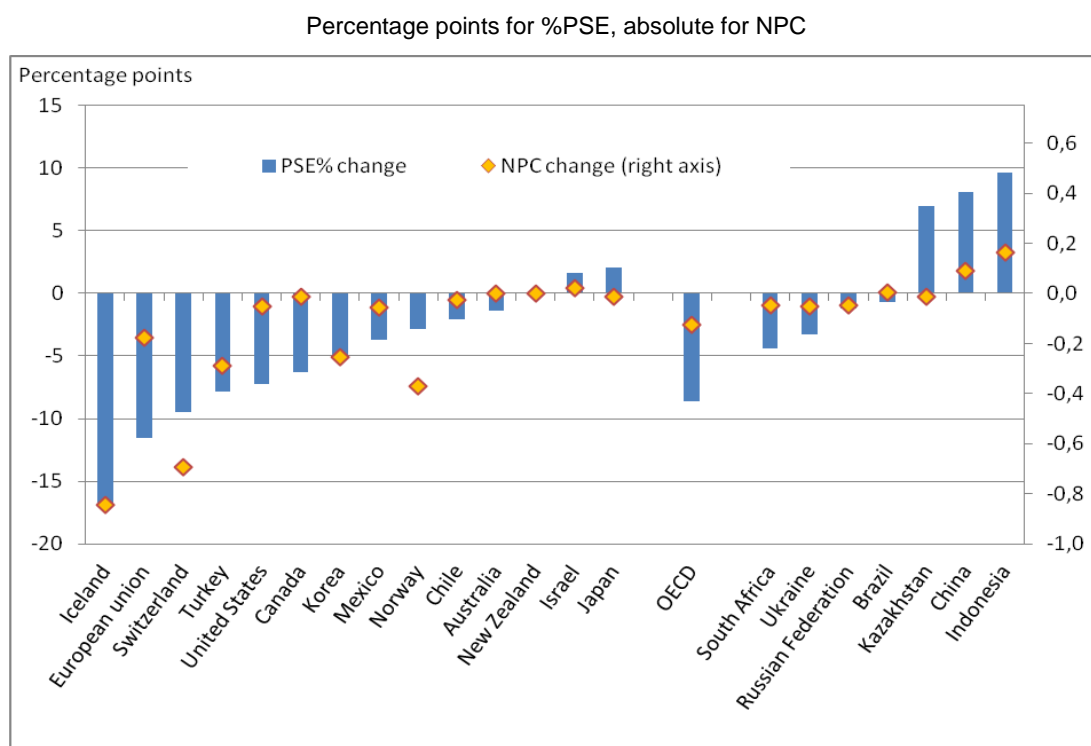
Source: Author's calculations based on PSE database of OECD.

17. Behind these averages for country groups there is a large variation across individual countries. While in the OECD area overall the %PSE declined by nine percentage points from 2002-07 to 2012, it decreased by 17 percentage points in Iceland and went up by two percentage points in Japan during that period (Figure 3.3). Among the emerging economies covered, changes of the %PSE during that period

range from minus four percentage points in South Africa to plus ten percentage points in Indonesia. Given these large differences in the evolution of producer support across countries all of which faced similar developments of international market prices it is clear that in several of the countries covered changing conditions on world markets can explain only some part of the observed changes in producer support. The remainder must have been due to exchange rate movements and the evolution of policy settings.

18. The same conclusion can also be drawn from the wide variation in changes of the producer Nominal Protection Coefficient (NPC) during the period considered here (Figure 3.3). In most countries where the %PSE has declined, the producer NPC has also been reduced and *vice versa*, indicating that a reduction in support based on commodity output has contributed to the decline in overall producer support.⁹ In the OECD area overall, the NPC declined by 0.13, from 1.23 in 2002-07 to 1.10 in 2012. This means that the gap between domestic producer prices (inclusive of payments per unit of output) and international market prices was reduced by 13 percentage points. In the seven emerging countries the (unweighted) average of NPCs increased from 1.07 to 1.08 during this period.

Figure 3.3. Change of %PSE and Producer NPC from 2002-07 to 2012



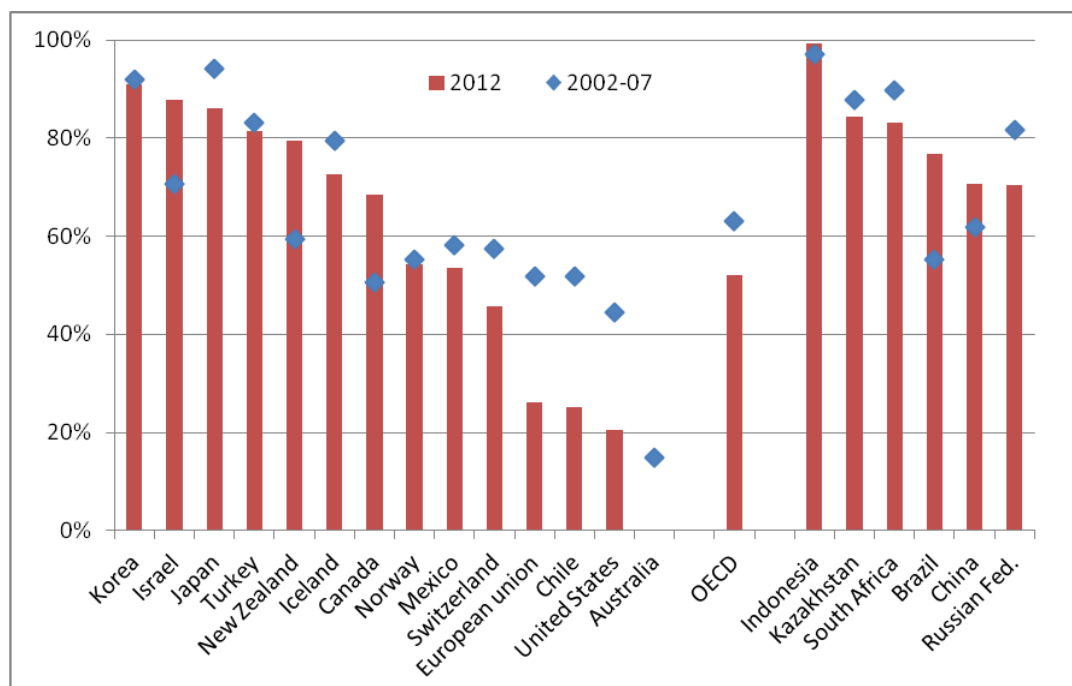
Source: Author's calculations based on PSE database of OECD.

19. The change in NPCs is one indication of the evolving composition of producer support. Another indicator, often used by OECD in presenting M&E results, is the share of potentially most distorting support in the PSE, consisting of support based on commodity output and payments based on variable input use without input constraints. This indicator exhibits much variation across OECD member countries, in terms of both its level and its change over the period considered here (Figure 3.4). The composition of

9. It should be noted that the producer NPC as defined by OECD includes not only market price support, but also payments per unit of current output (e.g. deficiency payments).

support has improved (in the sense of becoming less distortive) in nearly all OECD countries, with the exception of Israel and Canada.¹⁰ For the OECD area overall, the share of most distorting support in overall producer support has declined from 63% in 2002-07 to 52% in 2012. In the emerging countries covered, the (weighted average) share of the most distorting policies in all producer support is not only higher than in the OECD area, it also increased during the period considered here, from 68% in 2002-07 to 75% in 2012.

Figure 3.4. Share of Potentially Most Distorting Support in All Producer Support, 2002-07 and 2012



Notes: Potentially most distorting support is defined as support based on commodity output and payments based on variable input use without input constraints.

The Ukraine is not included in this figure as its share of most distorting support in the PSE was negative due to negative support based on commodity output.

Source: Author's calculations based on PSE database of OECD.

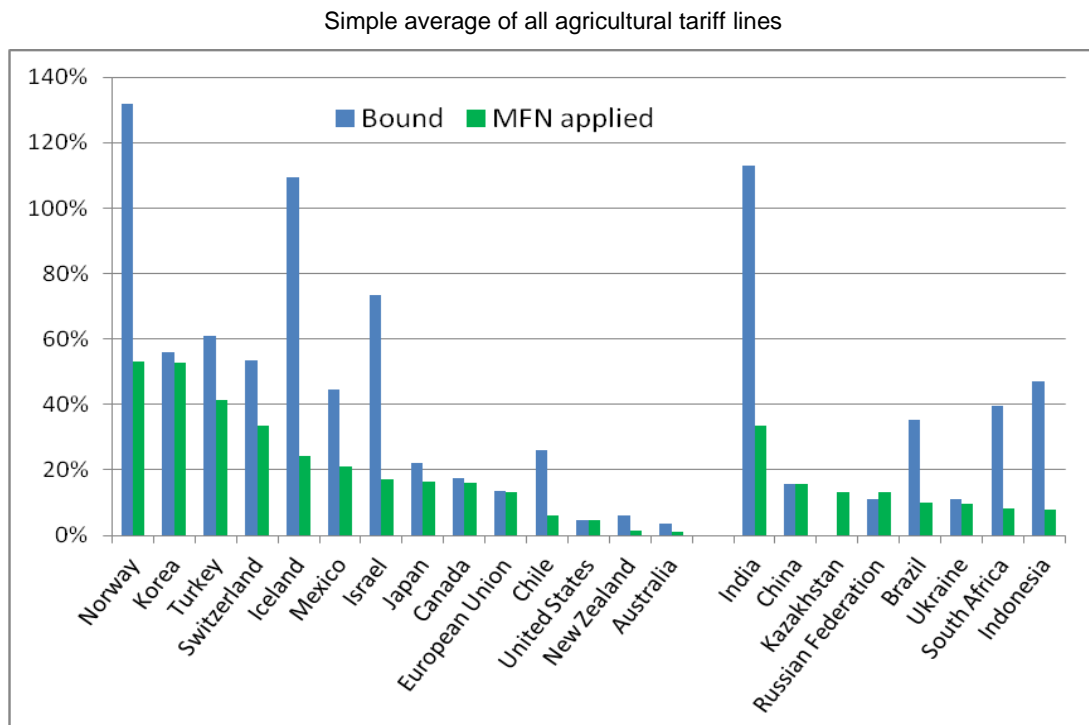
20. The overall picture then is that since the beginning of the Doha Round negotiations the evolution of producer support has diverged notably between the OECD area and the emerging economies covered in the OECD's M&E. In the OECD area producer support as a share of gross revenue declined, while it increased for the aggregate of the emerging economies. The result was that the emerging economies' share of producer support in the aggregate of all countries covered has grown significantly. Also, while the composition of support has changed in the direction of less distorting measures in the OECD area, the opposite was the case in the group of emerging economies.

10. The increase of this indicator in New Zealand is irrelevant given that New Zealand's %PSE is below 1%.

3.2 Import Measures

21. The level of tariffs in agriculture, averaged across all agricultural tariff lines (unweighted), differs very much across the countries covered here (Figure 3.5).¹¹ In 2012, averages of MFN applied tariffs ranged from 1.2% in Australia to 53.2% in Norway. Among the emerging countries covered here, India's MFN applied tariff level in agriculture is highest, at 33.5%. It is also notable that in many countries the tariffs actually applied (MFN) are far below the tariffs bound. The "binding overhang" is largest in Norway and India where in both cases it amounts to nearly 80 percentage points. Contrary to what is sometimes suggested, large margins of binding overhang exist not only in emerging and developing countries.

Figure 3.5. Bound and MFN Applied Tariffs for Agricultural Products, 2012



Notes: For some countries, data relate to 2011.

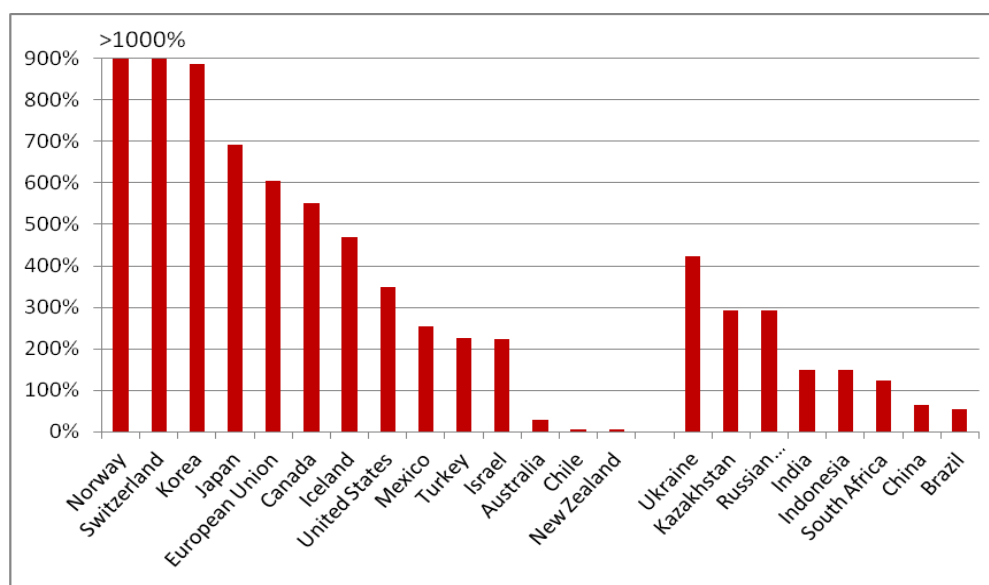
In the WTO database, agricultural products are defined as under the WTO Agreement on Agriculture, and specific tariffs are converted to *ad valorem* equivalents.

Source: WTO (2014a).

22. In most countries, tariffs for individual agricultural products vary widely across tariff lines. In many cases the maximum duty for any agricultural tariff line is very far above the average tariff level, often as high as several hundred percent, in the cases of Norway and Switzerland even above thousand percent (Figure 3.6). Only Chile has a schedule of uniform tariffs, 6% for all agricultural products. Among the countries covered here, in only three other cases the maximum tariff is less than five times as high as the average, i.e. in China, India and New Zealand.

11. In addition to the countries included above in the section on producer support, India is included here in the review of tariff levels.

Figure 3.6. Maximum Duty (MFN Applied) Among all Tariff Lines for Agricultural Products, 2012

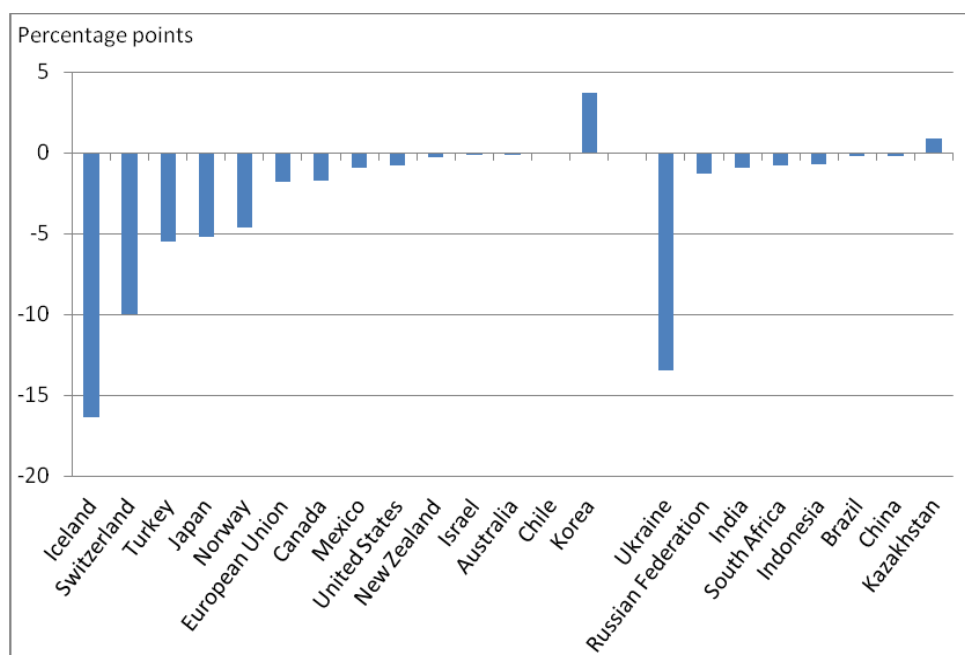


Source and notes: See Figure 3.5.

23. From 2007 to 2012, average applied tariffs in agriculture have declined in all OECD countries with the exception of Korea (Figure 3.7). Tariff averages have also declined in all emerging economies covered here with the exception of a minor increase in Kazakhstan. Some countries tend to adjust tariffs from time to time, to compensate for changes in international market prices. China and Indonesia are cases in point (OECD, 2013, p. 36). There are also cases where governments change import tariffs in an *ad hoc* manner. Examples of the latter practice are Argentina, which increased tariffs on certain products on a temporary basis from 20% to 35% on 23 January 2013; or the customs union between the Russian Federation, Belarus and Kazakhstan where some tariffs were increased and others reduced in 2010 and subsequent years; or application of interim tariffs in China in 2011, resulting in a reduction of tariffs on several products (WTO, 2014b). As tariff bindings did not change much since the end of the implementation period of the Uruguay Round (except where countries acceded later to the WTO), reductions in applied tariffs have gone along with an increase of binding overhang.

24. In addition to such *ad hoc* changes in import regimes, governments can take recourse to various types of trade remedies. One of them is the safeguard generally available under WTO rules. For example, between October 2012 and October 2013, there were six cases in which WTO Members initiated safeguard investigations, four cases in which provisional and one case in which definitive safeguard measures were adopted regarding agricultural products (WTO, 2013a). In addition, where countries have reserved the right to use the Special Agricultural Safeguard (SSG) under the Uruguay Round Agreement on Agriculture, they can take recourse to that mechanism. For example, Korea has frequently implemented SSG action mainly on ginseng imports, but also on a number of other products, and the USA has made use of the price-based SSG mainly on dairy products and typically for limited quantities of individual shipments. Moreover, anti-dumping and countervailing duties can be used in appropriate cases. For example, in March 2009 the EU imposed anti-dumping duties and countervailing duties on biodiesel imports from the US, for a five-year period set to expire in July 2014, and in November 2013, the EU also imposed anti-dumping duties on biodiesel imports from Argentina and Indonesia.

Figure 3.7. Change of Average Tariffs (MFN Applied) for Agricultural Products from 2007 to 2012



Source and notes: See Figure 3.5, and WTO, ITC, UNCTAD (2008), and author's calculations.

25. Tariffs constitute only one category of the host of 'traditional' border measures (as opposed to non-tariff measures such as sanitary and phytosanitary restrictions). Another category of import barriers in agriculture is frequent use of tariff rate quotas (TRQ), many of which have resulted from the process of tariffication in the Uruguay Round. All WTO Members taken together maintained 1 094 TRQ for agricultural products in 2011 (WTO, 2013b). This number, which has come somewhat down from 1 430 in 2002, has remained nearly unchanged since 2007. Fill rates of these TRQ vary across countries, products and methods of administration. On average (unweighted) the fill rate over the 2002-2011 period was 61%, with rather little variation from year to year.¹²

26. Market access is also greatly influenced by regional trade arrangements (RTAs). The prevalence of RTAs has grown significantly in recent years. As of mid-2014, 283 RTAs were in force (WTO, 2014c).¹³ During the Doha Round so far, i.e. from 2001 to 2013, some 13 new RTAs entered into force on average every year. In 2008, slightly more than one third of all world merchandise trade (excluding intra-EU trade) was conducted within RTAs, up from 18% in 1990 (WTO, 2011, p. 64). The share of global trade in agricultural products flowing between countries connected through RTAs has grown from slightly above 20% in 1998 to nearly 40% in 2009 (Bureau and Jean, 2013a).

27. Over time the share of agricultural tariff lines has grown for which partner countries of new RTAs have agreed complete tariff elimination, though there is still considerable variation across RTAs.

12. It should, though, be noted that for many TRQ (accounting for around 40% of all TRQ between 2002 and 2008; more recent years may not be representative due to late notifications) no imports are notified, for various reasons.

13. This is the number of 'physical' RTAs, each of which may include an agreement relating to goods, one on services and an accession to an RTA. If all these individual agreements are counted separately, 379 RTAs were in force mid-2014.

The share of duty free tariff lines in agriculture at the end of the implementation period may be as low as 32.3% (e.g. Japan-Switzerland RTA on the side of Switzerland, Japan is to eliminate 62% of all agricultural tariff lines by 2014) or as high as 100% (e.g. Thailand-New Zealand RTA, both parties) (WTO, ITC and UNCTAD, 2013). Another category of preferential trade is conducted under non-reciprocal preferences, in particular those extended by developed country importers to developing country exporters, covering in 2008 another 17% of all merchandise trade (calculated from data in WTO, 2011). If both categories of preferential arrangements are taken together, then of all agricultural trade conducted under them in 2008, 24.1% benefited from tariff preferences, 36.4% was non-preferential trade, and 35.1% had MFN duties that were zero anyhow (WTO, 2011, p. 79). The trade-weighted preference margin on all agricultural trade under preferential regimes was four percentage points (ibid.). In North-South RTAs, South countries receive a notably larger preference margin than North countries (Bureau and Jean, 2013b). RTAs have generally resulted in a significant expansion of agricultural trade among the partner countries, in terms of both increasing trade flows already existing before the RTAs were concluded and new trade in products not originally exchanged (Bureau and Jean, 2013b).

3.3 *Export Measures*

28. An important exception for agriculture in the WTO is that *export subsidies* are still legal, though only within the country and product specific constraints agreed in the Uruguay Round. In the Doha Round negotiations, one aim is to eliminate that exception. At the Bali Ministerial Conference of the WTO, Ministers declared:

"We recognize that all forms of export subsidies and all export measures with equivalent effect are a highly trade distorting and protectionist form of support, and that, accordingly, export competition remains a key priority of the agriculture negotiations in the context of the continuation of the ongoing reform process set out in Article 20 of the Agreement on Agriculture, in accordance with the Doha work programme on agriculture and the 2005 Hong Kong Ministerial Declaration.

In this context, we therefore reaffirm our commitment, as an outcome of the negotiations, to the parallel elimination of all forms of export subsidies and disciplines on all export measures with equivalent effect, as set out in the 2005 Hong Kong Ministerial Declaration. We regret that it has not been possible to achieve this objective in 2013 as envisaged in that Declaration.

...

We recognize the decrease in recent years in the use of export subsidies subject to reduction commitments under the Agreement on Agriculture, as indicated by information contained in Members' notifications to the WTO, and the positive developments that have also taken place in other areas of the export competition pillar." (WTO, 2013c).

29. Following that declaration, the WTO Secretariat sent questionnaires to all Members, in order to collect information on export competition policies. The results were compiled in a Secretariat background document (WTO, 2014d and addenda), providing up-to-date information on export subsidization and equivalent measures.

30. Actual use of export subsidies has declined notably in recent years, in part as a result of high prices on international markets, but in part also due to policy reforms. Of the 18 WTO Members (counting all EU member countries taken together as one) that had agreed non-zero export subsidy commitments in

the Uruguay Round, ten countries¹⁴ have not used export subsidies in all years notified since the beginning of the Doha Round in 2001.¹⁵ Two countries have not submitted notifications since the Doha Round began.¹⁶ The remaining six WTO Members can be grouped in three classes. Three of them have continued to make ample use of their scope for granting export subsidies, using in the most recent years notified (up to 2011 or 2012) as much as about 20% (Canada and Switzerland-Liechtenstein) or even about 50% (Norway) of the sum of their aggregate budgetary outlay commitments (across all commodities). The US has made zero or only marginal use of its commitments since 2003 (2010 being the last year notified). The EU, finally, is the WTO Member that, when the Uruguay Round implementation period began, held by far the largest share of all export subsidy commitments in the WTO, amounting in 1995 to nearly 70% of all "rights" to budgetary outlays, and granted the overwhelming share of all export subsidies paid, accounting for nearly 90% of the total in 1995 (Tangermann, 2002). In the first years of the Doha Round, the EU still utilized about 40% of its outlay commitments. Since 2004 the EU's export subsidies declined, and in 2011, the most recent year for which the EU notified export subsidization, it used no more than 2% of its outlay commitments. In 2013 the EU stopped using export subsidies, and under its new policy framework for the 2014-2020 period it has given up on using export subsidisation as a systematic tool of its market policy, though it can still use export subsidies as an "exceptional measure". Under its 2014 Farm Bill The US has repealed the Dairy Export Incentive Program.

31. While use of direct export subsidies has declined significantly, the picture is less clear regarding other export measures "with equivalent effect", such as export financing, food aid and state trading enterprises. In particular, in the absence of data on the subsidy equivalent of export measures that are not direct subsidies it is not possible to gain an impression of the overall magnitude of the measures concerned and their evolution over time. With regard to *export financing support* (export credit, export credit guarantees and insurance programmes), the general impression one can derive from the data provided by the twelve WTO Members that submitted information (WTO, 2014d, Add.2) suggests that during the period since the Doha Round began no major change is discernible in the extent to which support for export financing is provided. The information submitted by Members granting *food aid* (WTO, 2014d, Add.3) suggests that most food aid is provided in cash form, and where in kind aid was delivered it went mostly to the World Food Programme or to recipients in an emergency situation. In their notifications and questionnaire responses twenty WTO Members reported that they had a total of 77 *state trading enterprises* (STEs) dealing with agricultural exports (WTO, 2014d, Add.4). China, Colombia and India reported the largest numbers of STEs, accounting among them for a little more than two thirds of all reported STEs. A few STEs were abolished since 2001, but other countries also established new agricultural exporting STEs.

32. Commenting on the information provided in the WTO Secretariat's background note, the Cairns Group summarized the picture as follows:

"Despite some of the information gaps, the Secretariat's report reaffirms the fact that since the launch of the Doha Round there have been positive developments in the export competition pillar. In particular, export subsidy expenditure has fallen significantly and there are examples of individual Members' reforms in the other pillars. This generally positive trend however is not without exception as not all Members have reformed and some have introduced new export competition policies since the beginning of the Doha negotiations and in recent years." (WTO, 2014e).

14. Australia, Brazil, Colombia, Iceland, Indonesia, Mexico, New Zealand, Panama, South Africa and Uruguay.

15. The source of the data used in this paragraph is (WTO, 2014d).

16. The most recent export subsidy notification for Turkey was 2000 and for Venezuela 1998.

33. In the past, relatively little attention was paid to *export restrictions*, though there have always been occasional instances of governments blocking exports so as to maintain domestic food supplies in moments of acute shortages. Moreover, for a long time already some countries have tended to tax exports of raw materials in order to support availability to domestic consumers and processors, to collect fiscal revenue or for a host of other reasons.¹⁷ However, when agricultural product prices on world markets spiked in 2007-08 and a number of exporting countries imposed export restrictions, placing priority on domestic food security, the international community began to pay much more attention to the implications of export restrictions in the food sector, and the issue of how to deal with them in the international trading regime became an agenda item in various fora.

34. In the framework of the WTO, information on which country has adopted which type of export restrictive measures for which good is scarce. Anania (2013, p. 17) observes that

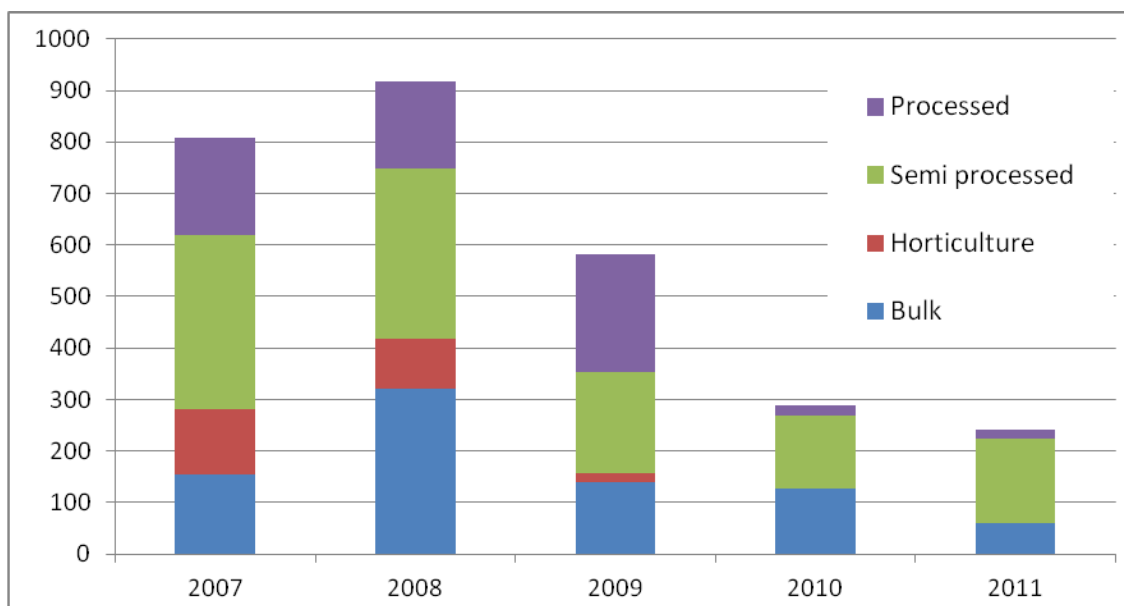
"In fact, the WTO notification and consultation record on export restrictions is disappointing. It appears that ... between 1995 and March 2013 only eight members submitted notifications for the introduction of 14 export restricting measures under Article 12 of the AoA, and only one country, the Kyrgyz Republic, notified export restriction measures at the time of the 2007- 08 price spike."

35. In reality there was a large amount of activity regarding export restrictive instruments in 2007 and subsequent years. Liapis (2013) provides an overview, based on an inventory maintained by OECD. The measures used, by the 16 exporting countries covered in the inventory, include export duties, tax rebates on exported goods, quotas, bans, licensing requirements, and minimum export prices. In his Table 1 Liapis specifies the number of measures taken on four groups of agricultural products in the years 2007 to 2011, and his summary is presented here in graphical form (Figure 3.8). Liapis' count includes all measures taken, whether more restrictive or more liberalising (following a restrictive measure), and each specific agricultural product affected counts as one measure. The height of activity regarding export restrictive measures was in 2008, with more than 900 measures taken. The largest number of measures was taken in the sector of semi processed products such as vegetable oils, live animals or hides and skins, followed by the sector of bulk products such as grains and oilseeds.¹⁸ Depending on the year concerned, between 20 and 26 countries took export restrictive measures, but this number includes some double counting as some of the 16 countries covered have obviously adopted measures in more than one sector. Regarding the type of measures taken Liapis found that "thirteen of the 16 countries banned exports of at least one product in at least one of the five years between 2007 and 2011. Export taxes were used by nine countries while export quotas were used by eight".

17. Lists of rationales for imposing export restrictions are provided in Box 1 of Kim (2010) and Table 7 of Fliess and Mård (2012)

18. Liapis (2013) observes that "this may reflect the fact that more goods are classified as semi-processed rather than bulk".

Figure 3.8. Export Measures Affecting Agricultural Products: Number of Measures Taken, 2007 to 2011



Source: Table 1 in Liapis (2013).

36. Based on this information it appears that at the same time when export support through export subsidies and equivalent measures was declining there was significant activity in the domain of export restrictive measures.

3.4 *How Restrictive Are WTO Disciplines?*

37. Since the Uruguay Round, there is a firm set of rules and quantitative commitments for agricultural policies of WTO member countries, as defined by the AoA and specified in countries' schedules. The evolution of both policy settings and market conditions can change the extent to which a country's commitments under the AoA impose effective constraints on its policy pursuit, in the three areas of market access, export competition and domestic support. The extent to which existing bindings are already restrictive will also have some impact on governments' willingness to accept a further tightening of constraints in ongoing negotiations.

38. As far as *market access* is concerned the current situation in many countries is such that MFN tariffs actually applied for most products are below, sometimes significantly below the tariffs bound in the WTO, at least for the average of all agricultural tariff lines (see above and Brink, 2014). That average may, though, hide several cases where tariffs applied for individual products make full use of the respective binding. This is likely to be the case for products that are considered particularly sensitive. Moreover, some countries have set their applied tariffs more or less exactly at the bound rates or very close to them (see Figure 3.5 above). Among the OECD countries this is the case for Canada, the EU and the US. Among the emerging economies it applies for example to China, the Russian Federation and Ukraine. In these cases, i.e. where currently applied tariffs don't leave any binding overhang, any commitment to reduce tariffs that may result from the ongoing Doha negotiations will require actual tariff cuts. On the other hand, where the binding overhang is large enough no changes of tariffs actually applied will be necessary. Given the large number of tariff lines in agriculture in most countries only a highly detailed analysis could show to which extent alternative tariff cutting formulae would bring about actual reductions in tariffs applied.

39. The situation is somewhat similar in the domain of *export competition*. Overall it can be said that actual use of overt export subsidies has declined very much, if not actually disappeared, in many countries for many products (see above and Brink, 2014). This leaves much 'unused' scope in a large number of currently existing export subsidy commitments under the WTO. Yet, in this domain, too, only a detailed analysis of individual countries and products, and of both quantity and expenditure commitments, can show where an elimination of export subsidies, as aimed at in the Doha Round, would require noticeable changes. Even more data and research would be available to assess the situation regarding other forms of export support (financing, state trading and food aid). Yet, overall it appears that an agreement to eliminate all export subsidies and to introduce equivalent disciplines for other forms of export support would now require much less changes of actual policies than ten years or so ago.

40. For *domestic support*, Brink (2014) provides a careful analysis of the extent to which existing commitments are binding, and of the room of manoeuvre, if any, that commitments as envisaged in the Doha negotiations under Rev.4 would leave for individual countries' policies. His study examines the situation of 19 selected countries, seven developed and twelve developing. It compares the support levels reported in the latest domestic support notifications submitted by these countries with both their commitments under the existing AoA and the new commitments that would result if the rules and parameters suggested in Rev.4 were to apply, taking, in a detailed way, into account the varying reduction commitments under Rev.4 that individual countries would have to respect given their respective status such as base levels of support, whether or not having an commitment on Aggregate Measurement of support (AMS), whether or not being a developing country, whether or not being a country having recently acceded to the WTO. One of Brink's general findings on domestic support is, thus, that Rev.4 would establish "a set of rules and commitments that varies greatly among countries" (Brink, 2014, p. 67).

41. Brink finds that as a result of market developments and the evolution of policies, as reflected in the most recent available notifications of domestic support, an agreement on rules and parameters as suggested in Rev.4 would not noticeably restrict agricultural support policies in most of the 19 countries covered in his assessment. This is particularly the case for the new bindings on Overall Trade Distorting Support (OTDS) that would be introduced if Rev.4 were to be implemented:

"Most countries – possibly all except one in this study – would have a comfortable margin between applied trade-distorting support measured as OTDS and the new Bound OTDS under Rev.4. The same can be said about the new limits on total and on product-specific blue box payments." (Brink, 2014, p. 68)

42. The one country that might have difficulties is Norway where Brink finds that its Current OTDS (calculated from its notification for 2011) is about 50% above the Bound OTDS that Norway would have to respect under Rev.4, requiring potentially significant policy adjustments. A number of other countries might find that their final Bound OTDS leaves "a very large margin above Current OTDS", namely Argentina, China, Indonesia, Korea, Mexico, the Philippines, South Africa, Thailand and Viet Nam. Brink found a "smaller but still sizeable" margin for Brazil, Canada, the EU, Japan, and Switzerland. In the case of India, the result would depend on whether its "large input subsidies claimed under [AoA] Article 6.2" have or do not have to be included in the Current OTDS – an issue that is, according to Brink not entirely clear from the wording of Rev.4. The US was found to be very close to exceeding its Bound OTDS based on its 2011 notification. The policies introduced in the US with the 2014 Farm Bill, including elements of support that vary inversely with prices and revenues, may have increased the likelihood of the US exceeding its OTDS limit when market prices decline.

43. Regarding the AMS bindings under Rev.4, Brink points out that most countries would not have major difficulties meeting this constraint either. Two factors have contributed to this situation, i.e. the elimination of "administered prices" in several cases, resulting in a decline of notified Current Total AMS,

and the increase in world market prices, reducing those payments that depend on price gaps. There are, though, a few special cases where the AMS constraint under Rev.4 could turn out to be binding. Brink also suggests that there may be several cases where product-specific AMSs exceed the new limits that would be set if Rev.4 were to be implemented. The blue box constraints under Rev.4, finally, would require policy adjustments in Norway, and their product-specific version could constrain rice support in Japan.

44. Brink summarizes his findings regarding the extent to which Rev.4 would constrain current policies by suggesting that

"few countries would need to change their settings very much if at all in order to conform with the rules and commitments of an agreement corresponding to Rev.4, if implemented immediately. This is the combined result of policy settings having already been changed since the drafting of Rev.4, the rules and commitments of Rev.4 being generous enough and/or tailored to accommodate the situations of individual countries, and international prices of many agricultural products generally having increased since the time of drafting Rev.4." (Brink, 2014, p. 77)

45. When drawing conclusions from Brink's findings it is useful to keep in mind that they are based on policies as reflected in the most recent available notifications, some dating back to 2008 and none more recent than 2012. In reality, of course, actual policies of future years, possibly for a long time, will have to be set against any new commitments that would be agreed in the Doha negotiations. Moreover, future inflation can drive up levels of support to be notified and thus make any commitments agreed, probably again defined in nominal terms like under the AoA, appear more restrictive. Yet, as shown by Brink, commitments following from Rev.4 would, for the time being, in most cases contain considerable amounts of water, and this means that quite some time could pass before they begin to bite – if they ever do.

4. Market and Trade Impacts of Agricultural Policies

46. Agricultural market and trade policies pursue a number of objectives, ranging all the way from supporting farm incomes or improving food security to correcting for market failures, for example regarding the sustainability of resource use (OECD, 2008a). Often an individual policy instrument, such as market price support provided through tariffs and export subsidies, is supposed to achieve a combination of several agricultural policy objectives simultaneously. At the same time, society overall envisages many other objectives outside the realm of agricultural policies. In an institutional sense, these non-agricultural objectives are typically catered for by government departments other than the ministry for agriculture. Nevertheless most agricultural policy measures have impacts also on such non-agricultural objectives. Moreover, policies pursued in one country may have impacts on the situation of people in other countries, and among the aims pursued by friendly governments there is also the objective to minimize any negative implications their policies might have on the rest of the world. Where agricultural policies are planned and designed with a view to their effectiveness and efficiency the whole variety of these multiple objectives is taken into account.

47. The dominant part of agricultural policy measures is focused on either of two categories of objectives, redistribution of income or provision of public goods. Examples of the first category are support and stabilization of farm incomes or improvement of access to food among low-income households. An illustration of the second category is the protection of biodiversity. Objectives in both categories do typically not include any deliberate aims regarding quantities produced or traded.¹⁹ However, many agricultural policy measures have side-effects on markets and trade. While they may not form a part

19. Where the policy objective is a given degree (or increase) of self-sufficiency in food, quantities produced domestically or imported from abroad may be a relevant element. This policy orientation will be discussed in the next section.

of the stated set of agricultural policy objectives, these market and trade impacts are still highly relevant as they affect non-agricultural objectives of the government, such as overall economic wellbeing of the country, and they are also relevant as they may have adverse or positive implications for people in the rest of the world. It is, therefore, relevant to take a careful look at the market and trade impacts of agricultural policies. Work done in the OECD has provided insights into these impacts, some of which will be summarized here.

4.1 *Production and Trade Impacts of Reforming Domestic Support through Decoupling*

48. In many developed countries, government support to agriculture has traditionally relied heavily on market price support, provided either through border measures such as tariffs and export subsidies, sometimes combined with domestic market interventions, or through payments per unit of output such as deficiency payments towards given target prices. In the second half of the 1980s, more than 80% of all producer support in the OECD area came in this form of support based on commodity output. Over time the importance of this type of agricultural policy has declined and it now accounts for less than 50% of all producer support. While the share of support based on commodity output decreased, other forms of support that are more decoupled from agricultural output, in the sense of not being based on nor requiring production, have grown in proportion to overall producer support. This was particularly true, in terms of the OECD's classification of policy instruments in measuring PSEs, for payments based on non-current criteria without requirement to produce, and payments based on non-commodity criteria. The sum of these two policy categories, which accounted for less than two percent of all producer support in the second half of the 1980, now amounts to more than 25% of the PSE in the OECD area.

49. In other words, one significant development in the structure of agricultural policies that has taken place among developed countries over the last two and a half decades was the process of decoupling agricultural support increasingly from production. The evolution of farm policies in this direction has sometimes been referred to as being driven by the 'paradigm' of decoupling, reflecting a growing awareness that it is desirable to improve policy performance, both from a domestic perspective and with regard to reducing unintended international spillovers.

50. Work done in the OECD's Committee for Agriculture has greatly contributed to this development, through analysis and policy dialogue. The analytical studies were done by both the OECD Secretariat and consultants from academia, and they involved theoretical considerations as well as empirical research. They yielded insights into channels of influence that alternative policy instruments can have on farmers' decisions, and on that basis they helped to understand the market and trade implications of more or less decoupled support measures. The most important results of the suite of studies on decoupling and their policy implications were summarized in the document on "Decoupling: Policy Implications" (OECD, 2006a).²⁰

51. It is possible, in theory, to define the properties of an agricultural policy measure that is fully decoupled in the sense of having no link whatsoever with input or output quantities and hence not impacting at all on production and trade. However, OECD research has yielded the crucial finding that even the most decoupled instruments that are relevant in the practice of agricultural policy making have at least some market impacts. Hence "decoupling" should be seen as a matter of degree, rather than an absolute concept: some policies are more and others are less decoupled. At the same time, though, it has also become clear that the continuum between more and less decoupled policies spans a wide range, extending from rather strong interference with market forces to measures that have only minimal impacts on production and trade. The background to these findings is that various mechanisms are at work that

20. The document also provides an overview of, and references to, all individual OECD studies on decoupling done over several years.

determine the way in which agricultural policy measures impact on farmers' decisions and hence on production and trade. OECD research has identified three categories of effects that are relevant in this context.

52. First, policies can have static effects, operating more or less immediately when a given instrument is implemented. Typical examples are the impacts of policy-induced changes in output or input prices. When a policy raises the price of an agricultural product it is profitable for the farmer to produce more of it. When an input is subsidized the farmer is induced to use more of it. Static effects also include the impacts of quantitative constraints such as production quotas or compulsory land retirement. One of the most important findings of OECD research on the static effects of alternative support policies confirms the hypothesis that area based payments have less impact on output and hence trade than price support and output based payments, mainly because yields respond more strongly to output prices than to area based payments. It was also found, not unexpected, that area based payments without an obligation to produce have even less output impact. Other findings that were perhaps less commonly expected include the result that subsidies on variable inputs are the most production and trade distorting policy among all measures analysed, and that area based payments can induce significant cross commodity effects.

53. Second, policies can impact production decisions through risk-related effects. Where a policy instrument reduces the variability of farm income it acts like an insurance. At the same time a policy that increases expected farm income and hence raises implicit farm wealth may lead the farmer to adopt riskier behaviour. Both the insurance and the wealth effect can result in an expansion of production if farmers are risk averse – an attitude that is found in many empirical studies. Thus, even if a given payment to farmers were to be designed so as to have the smallest conceivable static effects on production (say, a lump sum payment without any relation to given outputs or inputs) it is still likely to induce additional production because of its risk effect. One of the perhaps more surprising results of OECD work on decoupling was that the risk effects, often disregarded in policy debates, can be rather significant in quantitative terms, in some cases even larger than the traditional relative price effects. One implication of the analysis of risk effects is that insurance subsidies and other measures intended to reduce the variability of farm revenue or income may have rather strong impacts on production and trade. In this context it was also found that policies that have the effect of smoothing the variability of domestic prices relative to fluctuations of world prices may have a large impact in increasing the variability of world prices. Thus there is a clear trade-off between reducing risk for domestic farmers and increasing risk faced by farmers and consumers in the rest of the world.

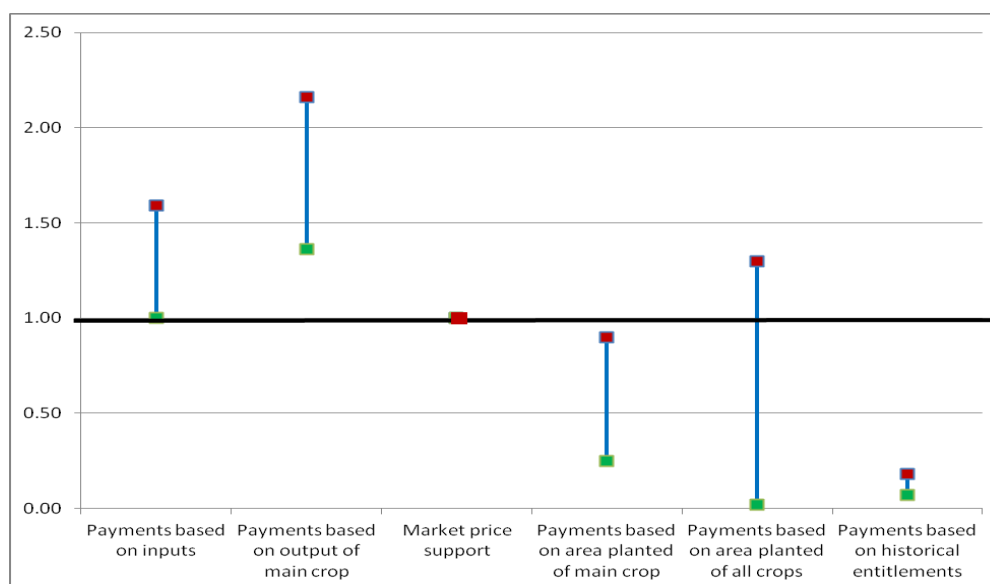
54. A third category of policy impacts studied in OECD work on decoupling has to do with dynamic effects, operating in the dimension of time. Such impacts can for example come through investment decisions. Additional farm incomes as well as less variability of returns can lead farmers to make larger investments, raising output potential in the future. While such investment effects were found to be relevant, OECD work though also yielded the impression that they tend to be smaller than the more direct relative price or risk related effects. More important may be another type of dynamic effect, operating through expectations regarding future policy conduct. For example, where farmers expect that base area or yields may be updated from time to time, with consequences for future payments received, they are likely to respond with current production decisions. Where such expectations are created and confirmed, rather strong production responses may be generated.

55. A central outcome emanating from OECD work on decoupling was a summary of the results provided by various quantitative studies regarding the comparative production impacts of alternative types of agricultural policies. The results were presented in terms of the production impact of one additional dollar spent on each of the different types of policy instruments, relative to the production impact of an additional dollar provided through market price support, the latter being set equal to one. These relativities were dubbed production impact ratios. Figure 4.1 provides a graphical representation of the results,

showing for each of the policies analysed the highest and lowest production impact ratio found among any of the studies reviewed. It cannot come as a surprise that results differed notably across studies, depending on the analytical methodology applied, the particular empirical case studied and the data used. The studies were therefore not strictly comparable, and comparison of results across the alternative policy instruments analysed must be interpreted with considerable caution. Also, since only a limited number of concrete policies were analysed the results should be considered no more than illustrative.

56. In spite of these caveats, a few general conclusions emerge. Input payments and payments per unit of the main crop tend to have the largest impact on production.²¹ One study found that one dollar spent on input payments could have a nearly 60% larger production impact than one dollar spent on market price support (production impact ratio 1.59). The lowest production impacts, on the other hand, were found for area based payments. The agricultural policy category with by far the lowest production impact found is that of payments based on historical entitlements, i.e. based on criteria that the recipient cannot change. Among the classes of policy instruments analysed such payments are hence the most decoupled policy. Yet, even payments based on historical payments were found to have some impact on production, though very far below that of market price support.

Figure 4.1. Production Impact Ratios of Alternative Agricultural Policies: Highest and Lowest Results of Various OECD Studies on Decoupling



Source: Table 1 in OECD (2006a).

57. The fact that even some of the most decoupled agricultural policies were found to have some production impact is mainly explained by their risk-reducing effects. One important implication of the finding that even strongly decoupled policies result in some expansion of production and hence some trade distortion is that the level of support provided matters. Where large amounts of money are spent on payments that are, in principle, strongly decoupled there may well be a significant impact on production and trade. However, this finding does not change the relativities across the policy alternatives. A given

21. The surprisingly large production impact ratio of 2.16 found for payments based on output in one study has to do with the risk-reducing effect of the counter-cyclical component of this kind of payment in some countries, providing more risk protection than many forms of market price support.

(potentially large) sum of money transferred to agriculture through market price support has a much stronger impact on production and trade than the same transfer made through payments based on historical entitlements.

58. Another important finding of OECD work on decoupling relates to the transfer efficiency, i.e. the share of policy-induced transfers to agriculture that actually adds to farm household income. It was found that one dollar spent on payments based on historical entitlements raises farm household income about twice as much as one dollar transferred to agriculture through market price support (OECD, 2001 and 2003a). Thus, if a government had the objective of raising farm household income in its country by a given amount of money, its policies would need to transfer only half the sum to agriculture through well decoupled payments than through market price support. Considering also that a dollar spent on payments based on historical entitlements has only, say, one fifth of the production and trade impact that a dollar spent on market price support can have, then reforming agricultural policy by moving from market price support to the most decoupled form of payments can reduce the distortion of production and trade by a factor of ten without decreasing the intended support to farm household income.

4.2 Trade Impacts of Improving Market Access

59. As seen above, import tariffs on agricultural goods are still relatively high in several countries, specifically on some 'sensitive' goods. Moreover, TRQs play a significant role in agricultural trade. In consequence, domestic market prices are kept above international levels, as reflected in NPCs. One of the objectives of the Doha Round negotiations on agriculture is to improve market access, by reducing tariffs and relaxing TRQs. OECD research has analysed the implications such improvements of market access might have. In particular, the same partial equilibrium model that is used for OECD's work on the Agricultural Outlook for markets, i.e. AGLINK, was employed, with the necessary modifications, to study the impact on world market prices. The analysis was done by using the most recent Outlook market projections for the coming years as the baseline for comparison with scenarios in which market access conditions were improved through gradual policy changes increasing from year to year to an assumed final level.

60. A first study (OECD, 2002b) looked at scenarios implying (i) an expansion of TRQ quantities by eventually 50%; (ii) an additional reduction of within-quota tariffs by 36%; (iii) a cut of out-of and non-quota tariffs by 36%; and (iv) a combination of (ii) and (iii). The somewhat sobering result was that the impacts on world market prices were rather small. Even for scenario (iv), i.e. the combination of all improvements of market access analysed, it was found that international market prices for most agricultural commodities included in AGLINK increased by no more than about one percent or less in the final year of the five year projection period. The only product category where larger price increases were found was dairy products, with the butter price rising by nearly ten percent, the price of cheese by about half that much and the price of skim milk powder by close to two percent.²² In a subsequent study (OECD, 2007a), working with updated market and policy data, including a larger set of individually modelled countries (e.g. Brazil, China and Russia) and a ten year projection period, essentially the same scenarios were analysed, except that the tariff reductions assumed were 50%, for both within and above quota tariffs. The finding was again that such tariff reductions and quota expansions might have only relatively small impacts on world market prices for most agricultural commodities, in the same order of magnitude found in the earlier study.²³ In both studies it was found that world prices of some agricultural commodities might decrease when barriers to market access are relaxed, due to substitution effects. Both studies also found

22. At the time, sugar was not included in AGLINK.

23. In the second study, world prices for beef and veal (Mercosur market) rose by 2.4% at the end of the ten year period studied, and for vegetable oils by nearly two percent. The butter price rose less and prices of cheese and skim milk powder more than in the first study.

that impacts on domestic market prices remained relatively small in most cases, with the major exception of the dairy sector where domestic prices in some countries with relatively high levels of protection came under more pressure.

61. An important finding of these OECD studies was that there are mainly three reasons why the market impacts may remain rather small when barriers to market access are relaxed by orders of magnitude as assumed under the scenarios studied. First, the tariffs assumed to be reduced were, as customary in international trade negotiations, the bound tariffs. In many cases this results in no or only small reductions in tariffs actually applied as there is significant binding overhang in several countries, discussed already above. Second, a similar situation exists regarding TRQs. Many TRQs are not filled, as highlighted above. Where that is the case, an expansion of the quota volume has no market effect. Third, many TRQs are rather small, relative to the size of the domestic market of the importing country concerned, and even more relative to the quantity traded internationally. Even an expansion by 50% does not add much to actual market access where a TRQ is small in the first place.

4.3 Trade Impacts of Reducing Export Subsidies and Equivalent Measures

62. As discussed above, use of *export subsidies* has declined significantly since the turn of the century, in several countries to the point where they have virtually disappeared. For the time being the EU, in the past by far the largest user of export subsidization, has discontinued granting export subsidies though in its market policy rules it has maintained the possibility of re-introducing them in 'emergency cases'. Given the low current use of export subsidies their complete elimination, desirable as it would be in terms of aligning WTO rules for agriculture with those for other sectors, would not have much effect on actual market conditions. This was different in the past when agricultural exports were still subsidized at a much larger scale by some countries. The two OECD studies mentioned in the previous section have looked not only into the impact that improvements in market access might have, but also analysed the market impacts of eliminating export subsidies. In the earlier study (OECD, 2002b) it turned out that impacts on world market prices for crops (wheat, coarse grains, oilseeds) and beef were minimal (in the final year of the five year projection period between plus one and minus two percent). The major reason for these limited impacts found was that export subsidization for these products implied in the base line projections was relatively small due to projected increases of world market prices and policy reforms, in particular in the EU.²⁴ For dairy products, though, much larger world market price impacts of eliminating export subsidies were found, in the final year by 9% for skim milk powder, 15% for whole milk powder and as much as 26% for butter. At the same time it was found that domestic prices in the countries eliminating export subsidies declined significantly, even for crops. For example, the EU's domestic price for coarse grains decreased by 14% in the final year. Domestic milk prices were found to decline even more, in the final year by 18% in Canada and 10% in the EU.

63. In the more recent study (OECD, 2007a), the change in export subsidization was not analysed in a separate scenario, but added to a scenario that also included the improvement in market access already discussed above. Moreover, the assumption was that export subsidies would not be eliminated completely, but that the volume commitments countries have under the Agreement on Agriculture were to be reduced by 50%. The incremental effect on world market prices that adding this export subsidy reduction to the market access scenario was even smaller than what had been found in the earlier study. Again the only sector where impacts were more noticeable was dairy products, though even there the largest world market impact found was a price increase of 7% for whole milk powder. In interpreting these results it should be considered that in the projection period studied, i.e. 2004-2013, actual export subsidization was already low and hence a good part of the assumed reduction in allowable volumes of subsidized exports did not achieve more than squeezing out the 'overhang' of commitments.

24. It should be noted, again, that at the time sugar was not included in AGLINK.

64. As mentioned above, the Doha Round negotiations in agriculture deal not only with direct export subsidies, but also with "all export measures with equivalent effect", i.e. *export financing, exporting state trading enterprises, and food aid*. OECD has invested significant efforts in conducting analysis of these 'indirect' forms of government support to agricultural exports. However, due to the political sensitivity of both the issues involved and the data required that work had to be discontinued, and the documents drafted were not declassified. A central focus of that work was to develop methodologies for dealing with the issue of the "equivalent effect", i.e. analytical approaches that allowed to investigate the impacts of these rather different types of export support in a comparable way.²⁵ Two benchmarks for comparison were shown to be relevant (OECD, 2004).

65. As a first benchmark, it is sensible to look at the extent to which the cost to foreign buyers is reduced. In the case of a direct export subsidy this is the subsidy granted. In the case of government supported or guaranteed export credit the cost reduction can result from lower interest rates than charged on markets, a longer duration of the credit, lower fees or other conditions that provide benefits to the importer relative to what would be the case in the absence of government support. The magnitude of the cost reduction can be calculated from these variables. For food aid (when used as an instrument of commercial policy) the cost reduction follows from the degree of concessionality. For example, where food aid is provided in fully grant form, i.e. 100% concessionality, the cost reduction is equal to the full price paid for the respective commodity when it is procured by the institution providing the food aid. Exporting state trading enterprises can benefit, for example, from government guarantees of their financing, their ability to set initial farm prices below expected prices, their control over planting, tax exemptions or from rents that accrue to them when they sell to markets where they enjoy preferentially low import tariffs. All these conditions can be taken into account when estimating the cost reduction. In addition, exporting state trading enterprises with monopoly powers may be able to price discriminate between different markets to which they sell. Where that is the case they can derive an extra benefit, over and above the cost reduction resulting from the other factors. Where appropriate and reliable data are available, the cost reductions resulting from given forms of government support to the "export measures with equivalent effect" can be estimated in a reasonably straightforward manner. They can be expressed as a total sum or per unit of the product concerned, dividing the total by the quantity of either the targeted exports or all exports. To illustrate the approach, tentative estimates were provided for measures applied in the wheat market in 1998. The total cost reduction generated by the 30 selected export competition measures covered in the analysis (including some direct export subsidies and some output payments) varied between 0.01 and USD 556.50 million per programme. The per unit cost reduction for the average of all exports was between 0.00 and USD 1 144.63 per tonne.

66. The second relevant benchmark is the market effect of a given export support measure. It needs to be investigated in its own right as there is not a simple one-to-one relationship between cost reduction and market effect. For example, where a measure is implemented such that the cost reduction is fully transferred to the buyer as a pure rent (for example food aid to recipients who could otherwise not buy any food in the market) it does not change conditions on the rest of the market. In this context it was emphasised that the concept of additionality is crucial. It was shown, for example, in an illustrative quantitative exercise based on the OECD's Policy Evaluation Model (PEM) how using given assumptions and parameters the additionality of given quantities of food aid provided by selected countries could be estimated, in that case with the result that 63% of the overall amount of food aid resulted in additional imports, while the remaining 37% replaced commercial exports. Using the same analytical framework it was also demonstrated that it was possible to arrive at plausible estimates of the comparative world market price impacts of eliminating alternative export support programmes. The policies included in this illustrative analysis comprised concrete and existing measures of given selected countries, in the form of direct export subsidies, government supported export finance, certain benefits to exporting state trading

25. The export impacts of payments based on output were also included in the analysis.

enterprises and food aid. In this way it was shown how the matter of "equivalent effects" can be dealt with in an operationally effective way – if the necessary data are made available and analysts are given leeway to engage in the necessary research.

4.4 Welfare Impacts of Agricultural Policy Reform

67. Impacts of reforming agricultural and trade policies were also analysed by OECD in the framework of a computable general equilibrium model (OECD, 2006b), including the overall economy, macro-economic relations and feedbacks between income generation on factor markets and consumer spending. For that purpose, the new model GTAP_{EM} was employed, modifying the widely used GTAP model so as to include a number of features relevant for analysing agricultural policies by adopting them from the PEM. The policy scenario investigated was a 50% reduction in (rates of) tariffs in both agriculture and all other sectors, combined with 50% reductions in (rates of) all budgetary payments to agriculture and export subsidies.

68. It was found that such agricultural policy and trade reform could raise global welfare by USD 44 billion per year, or 0.1% of world GDP. Nearly 60% of that global gain resulted from reforms in agriculture. Reduction of border protection through tariffs and export subsidies was found to be particularly important, accounting for four fifths of the global gains to be reaped from reforming agricultural policies. As far as country groups were concerned, it turned out that three quarters of the global welfare gains accrued to OECD countries, half of which stemmed from reforming their own agricultural policies. Non-OECD countries were also found to gain slightly from agricultural policy reforms in the OECD area, though a much larger part of the welfare gains reaped by the non-OECD countries originated from liberalization of imports of non-agricultural products into the OECD countries. The sources of welfare gains, though, differed much across the non-OECD countries. For example, the greatest gains for Brazil came from agricultural policy reform in the OECD countries, China was found to gain most from opening-up OECD markets for non-agricultural goods, while India and South Africa benefited most from non-agricultural reforms outside the OECD area.

69. In conjunction with the global analysis, within-country distributional implications of such policy reforms were also analysed at the household level, through country case studies for Brazil, Italy, Malawi, Mexico and the United States. Each of the case studies worked with its own modelling framework, generally a computable general equilibrium model with disaggregate representation of various groups of households within agriculture and in the rest of the economy. As expected, results differed very much from case to case, depending in particular on the direction of price changes resulting from reforms and the nature of the linkages between factor income and market developments in the individual categories of households. It was important, though, that the analysis demonstrated that welfare implications of a global reform of agricultural and trade policies can be traced all the way down to the level of wellbeing in different types of families.

4.5 Impacts of Export Restrictions

70. As discussed above, export restrictions were an important element of the picture when food prices spiked in 2007-08 and subsequent years. OECD work has aimed to throw light not only on the policy actions taken at that time, but also on their market and trade impacts. In an econometric exercise (Liapis, 2013) the question was asked whether exports of rice, wheat and maize from countries that imposed export restricting measures had remained below their otherwise explainable level²⁶ in years when such measures were taken. It was found that export restricting measures had a statistically significant restraining impact on exports only in the case of rice, but not for wheat and maize. In another part of that

26. Other explanatory variables included in the regression analysis were exportable surplus and ending stocks.

study, also based on a similar econometric approach and looking at the same three products, it was asked whether export restrictions had negatively impacted on the volume of imports into countries sourcing their imports from exporters imposing restrictions. No statistically significant impacts of export restrictions were found for any of the three cereals.

71. As suggested in the study, these results need to be interpreted with considerable caution. Trade data used in the analysis were available only on an annual basis, and hence the short term and immediate impact that export restricting measures can have on market conditions could not be traced in this analysis. Moreover, because of the annual periodicity of the analysis no distinction could be made between different types and intensities of the export restricting measures included in the inventory (from which some information was presented above). All export restricting measures were represented in the regression equations through a zero-one dummy, and thus a small export tax was represented the same way as a complete ban of exports.

72. The limitation of annual periodicity was overcome in an earlier OECD study (Jones and Kwiecinski, 2010) which could use quarterly data for exports of wheat, maize, rice and soybeans from major exporting countries in the period 2006 to 2009. It was found that export restrictions were mostly effective and kept quantities exported well below the levels that would otherwise have been expected. The timing of these export constraints was also crucial for their world market impact because export volumes were reduced at precisely the moment when the price rise on world markets was already accelerating. This study, therefore, confirmed findings of several other authors who concluded that export restrictions contributed decisively to driving international market prices further up in the price spike episode of 2007-08 and subsequent years.²⁷

73. The beggar-thy-neighbour implications of export restrictions (and import tariff reductions), i.e. the upward price pressure imposed on international markets by countries aiming at keeping domestic prices low in times of scarcity, was also demonstrated in an OECD study that simulated alternative policy responses to price spikes (Thompson and Tallard, 2010). Using AGLINK and exposing international markets for wheat and rice to a simulated exogenous shock that drives prices up it was shown, among others, that in a tight market situation world prices rise even more if major exporters try to stabilize domestic prices through export restrictions (and reduced import tariffs). It was concluded that

"Policies that insulate domestic consumers or producers from responding fully to an international price surge exacerbate the world price increase and force greater adjustments on producers and consumers in other countries to sell even more or buy even less in order for supply and demand to adjust to the higher peak prices." (Thompson and Tallard, 2010, p. 3)

4.6 Impacts of Non-Tariff Measures

74. Given the importance of non-tariff measures (NTMs) in food and agricultural trade, the OECD has engaged in several studies on aspects related to such regulatory measures. Particular attention was paid to the implications of the WTO Agreements on Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary Measures (SPS), and on that basis more general conclusions were drawn regarding analytical and implementation aspects of NTMs (for example OECD, 1999 and 2003b). A conceptual framework was developed that allows for a systematic accounting of the economic costs and benefits of imposing given NTMs and hence for a reasoned choice among alternative ways of dealing with the market failures that NTMs are supposed to correct (OECD, 2008b). The usefulness of that framework, its flexibility in

27. See, for example, Headey and Fan (2008), Mitchell (2008), Wright (2009), Demeke, Pangrazio and Maetz (2009), Dawe and Slayton (2010), Headey (2011), Tananka and Hosoe (2011), Anderson (2012), Martin and Anderson (2012) or Anderson, Ivanic and Martin (2013).

analysing different sets of issues, its information requirements, but also its limitations were then demonstrated by applying it to the analysis of three concrete examples of NTMs introduced to deal with specific matters regarding sanitary and phytosanitary issues (van Tongeren et al, 2010). Another OECD study (Korinek, Melatos and Rau, 2008) provided a review of methods to quantify the trade effects of NTMs in the agri-food sector and an assessment of which approaches might be particularly appropriate for which types of measures.

75. An attempt was also made to investigate the trade effects of changes to NTMs in the domain of SPS measures that may have been brought about by the rules established under the WTO's SPS Agreement (OECD, 2002b). The conceptual difficulties of pursuing an analysis of that type were highlighted, with a particular emphasis on identifying those concrete changes in SPS measures that were made just in response to requirements emanating from the SPS Agreement, but also with a view to establishing clear cause-effect linkages between modifications in SPS measures and changes in trade flows. To illustrate the issues, the study looked at five concrete cases of changes in SPS measures and the changes in the respective trade flows in subsequent years. It was found that each case had its idiosyncratic characteristics that made it difficult to draw general conclusions.

76. An interesting aspect is the treatment of NTMs, including SPS measures, in RTAs. Most RTAs include provisions regarding not only tariffs, but also NTMs, but the extent to which they are specific and actually geared to facilitating trade in agricultural and food products differs very much from case to case (Fulponi, Shearer and Almeida, 2011). In some cases the arrangements found in RTAs do not go beyond confirming rights and obligations under the relevant WTO rules, while in others they have the character of WTO plus provisions. The specific nature of such provisions going beyond the WTO Agreements on TBT and SPS were analysed by OECD in selected case studies, with a particular emphasis on procedural aspects regarding establishment and implementation of regulatory measures (von Lampe and Jeong, 2013).

4.7 *Impacts of Stockholding for Price Stabilisation*

77. The pronounced volatility of agricultural commodity markets has induced manifold efforts to bring more stability to these markets, in the interest of reducing risks for both farmers and food consumers. One of the options tried was the creation of buffer stocks that would take product off the market when prices appeared to decline too much and add to supplies when prices shot up. The idea to use such buffering stocks appears attractive. After all there is relatively little that can be done to eliminate the main source of volatility in agriculture, namely output fluctuations due to the vagaries of natural factors such as weather. Thus, using stock changes to compensate for such supply variations, and thereby dampening price volatility and alleviating the resulting problems for producers and consumers, looks like being the most promising avenue. Moreover, it is evident that there is a close relationship between stocks and price changes. In particular, price spikes on markets for storable commodities such as cereals have nearly always been associated with depleted stocks. Hence, holding sufficient stocks might seem to provide the best opportunity to fight price explosions in times of scarcity. In fact, when prices begin to spike the only source of additional supplies that could possibly prevent a price explosion is taking product from stocks. And accumulating those stocks in periods of particularly low prices would have the additional benefit of avoiding periods of excessive price depression. It can, therefore, not come as a surprise that throughout the history of agricultural market policy there have been frequent attempts at using buffer stocks to reduce price volatility, on both international and domestic markets. Yet, success was rare.

78. Experiences made with international buffer stocks, mostly as elements of international commodity agreements (ICAs), were reviewed in OECD (2010a). The rather clear conclusions drawn are worth citing verbally here:

"The discussion highlighted four problems with buffer stock agreements;

a) They are potentially very costly, in part because public storage crowds out private storage.

b) There is a need to update the stabilisation range in relation to changed market circumstances. This can result in controversy. Formulaic updating, on the basis for example of a moving average of past prices, reduces the potential for stabilisation and hence the value of the intervention, but does offset the costs of intervention.

c) Given sufficient finance, a buffer stock authority can maintain a price above the agreed floor. However, the buffer stock can only sell what it has previously bought so once its stock is exhausted the authority has no further means of defending the ceiling. The consequence is that buffer stock agreements tend to [be] more effective in limiting price falls than in curtailing the incidence and magnitude of spikes.

d) This feature is exacerbated by the possibility of speculative attack. Although attacks can take place either on a floor or a ceiling price, the problem is more serious at the ceiling.

In practice, there is little evidence that buffer stock stabilisation did result in any significant reduction in price volatility.

The substantive lessons from the ICA experience, where relevant to current circumstances, are therefore predominantly negative, informative about what should be avoided and not what should be done." (OECD, 2010a, p. 22-23).²⁸

79. The performance of national buffer stocks in reducing price volatility on domestic markets of the countries concerned is reviewed in OECD (forthcoming). Based on empirical studies, experiences made over the last 15 years with stock schemes in several African and Asian countries are assessed. A number of the stockholding policies reviewed did not aim primarily or exclusively at symmetric price stabilization (i.e. avoiding both too high and too low prices) but pursued other objectives as well, such as providing grains in cases of emergencies, distributing food aid, providing food assistance and managing international trade. In some cases providing price support to farmers was an (implicit) mandate of the schemes.

80. The OECD study points out convincingly that empirical analysis of the performance of these national stock schemes is fraught with difficulties, not only because of their multiple objectives but also because of the complex set of factors, beyond the stock policies concerned, influencing actual price developments. In particular, prices on domestic markets are also strongly dependent on trade policies pursued in the countries concerned. In fact, there is effectively no way that stockholding policies in any country can permanently override the domestic market price effects of its government's trade policy, unless the country concerned is either extremely large relative to the world market or has unlimited budget and storage capacities.

81. This complexity was not (fully) taken into account in the empirical studies reviewed, many of which concluded that the stock schemes had performed rather well. The OECD study finds that at closer inspection the track record of the national stock policies analysed is far less convincing. Fundamentally the

28. In this citation, paragraph numbering and references to earlier sections of the report are omitted.

findings from this OECD assessment of national stockholding policies resemble very much those of the earlier OECD review of international buffer stocks.

82. As far as reducing price risks for food consumers is concerned, the study finds that

"there is little evidence of buffer stocks stabilizing consumer prices. This is mainly due to the fact that buffer stocks are more adept by nature at preventing price drops than curbing price hikes and are more often used to raise prices. Accordingly, consumer prices often rise as a result of buffer stock schemes. Also, stocks that were bought with the purpose of stabilizing prices are not necessarily released with the same purpose and could end up in regular distribution programs. The fact that it is hard to trace these stocks complicates the analysis." (OECD, forthcoming, p. 11)

83. Where stock schemes appeared to have reduced domestic price volatility, the actual cause was in reality the impact of trade policy. Stockholding policies that aimed at supporting producer prices seemed to be more successful in reaching their immediate objective. However, there were significant negative side effects, of precisely the nature known from price support policies in OECD countries. The overall assessment of this OECD review of national stockholding policies is clearly summarized in the conclusion that "the overwhelmingly negative experiences with buffer stocks clearly suggest that countries would be better off without these policies" (OECD, forthcoming, p. 11).

84. It is only where storage policy and trade policy work hand in hand that stock schemes can have a beneficial influence on domestic markets. Fundamentally, the lesson is that for an individual country the most effective and least costly approach to controlling domestic price developments is trade policy.²⁹ Stockholding policies can play a supportive role, for example to influence prices in locations that are so remote (in economic terms) from international markets that the effects of border policies are not transmitted to them, or as an element of a social safety net regime aimed at food security. Stocks can also play an important role in providing food security for cases in which physical supply chains break down. Yet, food safety net stocks and emergency stocks have a role much different from conventional buffer stocks, and their management needs to be planned quite independently from policies pursued to deal with price volatility.³⁰

5. Achieving Optimal Policy Performance

85. Based on its analytical work and on policy dialogue with governments, OECD has gained insights into the performance of alternative policy options. In each particular environment, some policies work better than others. Choosing the specific set of measures that promises optimal policy performance in any given case is not a trivial task, but experience accumulated over time in assessing a wide choice of different policies helps to identify the best way forward. This section will first summarize some of the particularly relevant insights into optimal policy pursuit achieved in OECD work. It will then discuss whether these insights may need to be modified in the light of the changing conditions in markets and policies discussed above.

5.1 Policy Insights Generated by OECD

86. A close look at agricultural policies pursued around the globe indicates that a breathtaking variety of different types of measures and implementation details is available in the arsenal of instruments that can

29. It must, though, not be forgotten that national trade policies to stabilize domestic markets have the tendency to destabilize international markets.

30. For a more comprehensive discussion of the interplay between national stockholding policies and trade measures, see Tangermann (2011).

be employed to shape the conditions prevailing in and around agriculture. How can policy design choose the optimal combination of measures from this nearly endless range of instruments available? In principle the answer is easy: policy objectives need to be clearly defined, and instruments are then chosen such that the objectives are attained as far as possible without causing undesirable side-effects. In practice, however, policy design is significantly more complex, given that not only instruments come in a vast variety, but also objectives are manifold, there are conflicting interest of different segments of society, uncertainties regarding cause-effect relationships, path dependencies originating from the historical process of policy evolution, and all sorts of other complications.

87. In this complex policy environment, work done for and in the OECD Committee for Agriculture has adopted a way forward that combines a handful of basic principles with a pragmatic approach based on best practice found in the day-to-day pursuit of agricultural policies adopted in the OECD's member countries and other economies. The results of this work have been presented in a host of specific documents, but also occasionally been synthesised in more summary form. One document of that nature was the publication entitled "Agricultural Policy Design and Implementation: A Synthesis" (OECD, 2008a). In that booklet, the most important principles derived from a wide variety of different studies done in OECD are presented, in combination with experiences gained from concrete policies pursued in individual countries and with insights following from lessons learned regarding the practical implementation of policies in diverse settings. An important ingredient in policy design is also discussed, i.e. facilitation of reform where it turns out that modification of instruments employed can improve performance. This is where measures such as compensation and adjustment assistance come into play.

88. An absolutely central principle, running as a red thread through all considerations regarding policy design, is the importance of *minimizing distortions of markets and trade*. This is sometimes interpreted (if not criticized) as an ideological position, representing the entrenched philosophy of economic liberalism (or neoliberalism). Yet, there are very good practical reasons behind that principle. Three thoughts are particularly relevant. First, it is desirable to minimize international spillovers. Friendly nations are considerate of each others' interests and try to avoid doing harm to other countries' trade flows – not the least because they also want to see their own trade interests respected by other nations. Second, where policies have unintended side-effects on markets and trade they involve extra costs to the economy, in the form of use of resources that could be employed more productively in other activities. In the political process these extra costs are often not directly visible, but they are nevertheless real. For example, where an expansion of agricultural output follows from a policy that is intended to reduce erosion, the extra fertilizer and pesticides applied may use chemicals and energy that could have been utilized more profitably in producing medicines or fuel. Third, in most cases there are alternative policy options that could have achieved the same objective without the negative side-effects on markets and trade. They may require the investment of a little more political capital, but their outcome saves trade partners and the home economy avoidable trouble, and hence they are politically more sustainable in the longer term. The principle of avoiding market distortions wherever possible is thus not ideology, but well considered practical advice.

89. This general principle is equally relevant in various cases of specific policy concerns in agriculture. In many developed countries, one of the most prominent political priorities in agricultural policy making is support for farm incomes. The traditional response was to provide that support through price policy for agricultural commodities or output based payments, keeping domestic prices above the level prevailing on international markets. As discussed above, OECD has engaged in all sorts of analysis showing how such policies distort markets, cause trade problems, waste resources and reduce economic welfare. As a way forward, the concept of *decoupling* was developed and comprehensively analysed by OECD (see above). Decoupling provides a prime example of applying the principle of minimizing distortions of markets and trade.

90. Yet, decoupling should be seen as one element of the process of reforming agricultural policy, rather than as a policy approach in its own right. If a new agricultural policy had to be designed from scratch, 'decoupled' payments of the sort known in the practice of some OECD countries' policies would not have a place as there are more efficient and effective measures to achieve a given set of objectives. In particular, where it is felt that incomes of farm households need to be supported the same measures come to mind that are used in social policies for other sectors of the economy, i.e. policies that target families rather than agricultural land (still the basis of most 'decoupled' payments) (OECD, 2003a). Hence, a blueprint for a synthetic new agricultural policy would not include 'decoupled' payments. However, in the historical evolution of agricultural policy, where reform is initiated to improve policy performance, decoupling can play a useful role as an approach to reducing market and trade distortions while providing compensation to farm families that might otherwise come under socially unacceptable income pressure. Decoupling is, therefore, an alternative to removing past price support without any accompanying assistance to farmers, not a policy instrument to be introduced in the first place. Decoupling buys time during which farmers can adjust. Adjustments needed in response to policy reform can and should also be actively assisted through government policy, and there are good examples of best practice in terms of adjustment assistance provided by a number of governments in OECD countries (Kubota, 2007). As a method to provide *compensation* in the process of policy reform, decoupling can play a subsidiary role for an interim period until adjustments have taken place. Compensation is justified only for some time (OECD, 2006c), and hence there is no permanent function for 'decoupled' payments.

91. 'Decoupled' payments are sometimes saddled with *cross compliance* requirements, i.e. in order to be eligible for the payments farmers have to comply with given regulations, typically related to environmental and sustainability criteria. This may be a practical approach as it can save the transaction costs involved in setting up a separate system of sanctions for non-compliance. However, it remains a rather blunt approach as there is no one-to-one relation between the cost of compliance with existing regulations and the level of payments that have resulted from past reforms. Compliance costs differ from location to location, and in many cases also from farm to farm. Moreover, environmental conditions, and hence the need for environmental protection activities, also differ from place to place. Requiring all farmers to comply with the same criteria, in order to receive the 'decoupled' payments, is therefore neither efficient nor effective. Finally, the concept of cross compliance loses all rationality if the logic is turned around and rather than adding cross compliance requirements to anyhow existing direct payments the cross compliance criteria are utilized as justification for continuing to make direct payments. Environmental and similar needs may well require government action. But they cannot provide *ex post* justification of payments that were introduced for a different reason and whose level has nothing to do with the cost of the environmental action required.

92. This is where the second fundamental principle of effective and efficient policy design, emphasised in much of the OECD's work on agricultural policy, becomes important, i.e. *targeting and tailoring*. Well targeted measures are those that address the operational policy objectives as directly as possible, and the measures are well tailored if the rate and duration of support are commensurate with the cost of providing the expected outcomes (OECD, 2007b and 2008a). Again this is not abstract theory or wishful thinking, but very practical policy advice, illustrated by OECD with several examples of best practice in the form of concrete policies pursued in individual OECD countries.

93. There are, though, cases where it may appear that targeting is neither possible nor necessary because some relevant variables are closely tied together. Such cases have been considered in the long debate about the *multifunctional character* of agriculture and its potential implications for policy design. There is a whole suite of studies the OECD has done in this domain.³¹ The issue is that agriculture may, while producing commodities, also generate, as a joint product, non-commodity outputs (NCOs) such as

31. For an overview of OECD work on multifunctionality up to 2006, see Abler (2008).

rural development, environmental amenities or food security. Where these NCOs are desirable public goods or externalities, governments are called upon to provide them. If the NCOs concerned are strictly joint products then two implications would appear to follow. First, rather than looking after the provision of these NCOs directly governments could support the production of agricultural commodities and in that way make sure that the desirable NCOs are also supplied. Second, because of the jointness in production it is impossible to provide the desirable NCOs without affecting trade flows. Trading partners would then have to accept interference with their trade interests as an unavoidable implication of the legitimate pursuit of domestic interests by governments taking action to provide desirable NCOs.³²

94. In its work on multifunctionality, OECD has dealt with the wide variety of issues involved in much detail, from a theoretical perspective as well as with a view to concrete and practical policy matters in a considerable number of countries. Several policy implications emerged (OECD, 2003b and 2008c). One important finding, for example, is that strict jointness between agricultural commodity output and NCOs is rather rare. For example, environmental benefits may go along with agricultural production at low levels of intensity, but typically turn into a negative relation at higher levels of intensity in agricultural production systems. With regard to food security it turned out that practical experience in World War II and after has shown that there is rather little jointness between public support to agriculture in normal times and food security in times of crisis. Another policy implication is that the demand or need for given NCOs tends to be rather region-specific or even site-specific. For example, improvement of biodiversity may be needed for fauna in some places while flora is more threatened in other locations. Broad based policies such as price support to agriculture are not only inefficient in such cases, they may also be ineffective if not counter-productive. The general conclusion from all this work on multifunctionality, then, is that in essentially all cases studied targeted policies, addressing the provision of NCOs directly, are more efficient and effective. That such targeted measures also minimize distortions of markets and trade is an additional benefit.

95. One important area of policy making where these considerations can be fruitfully applied is that of *environmental policies*, a domain where OECD work on agriculture has been very active. Most environmental variables in agriculture are only loosely or actually negatively connected with the volume of agricultural output. Moreover many environmentally relevant conditions are location-specific, and any needs for environmental protection and improvement are, therefore, equally location specific. This means that policies based on agricultural output cannot do an efficient and effective job in pursuing environmental objectives. Instead, environmental policy measures need to be targeted. There is a whole variety of both market based instruments (such as taxes and subsidies) and regulatory measures that are well targeted and can therefore make cost-effective contributions to achieving environmental objectives in agriculture while minimizing distortions of markets and trade (OECD, 2013a).

96. An important area of OECD work on agriculture in recent years dealt with *risk management*, an issue that has become increasingly relevant in both policy debates and actual policy pursuit as markets have exhibited heightened volatility.³³ A number of highly relevant policy insights have resulted from this work stream. To begin with it is important to develop a holistic approach, taking into account the various types of risks facing farmers and the relationships among them. For example, price risk may or may not be (partially) compensated by output variations, and hence focusing on prices alone is not effective. What counts is the eventual impact of risk on farm income, and hence all factors affecting farm income should be taken into account when dealing with risk management.

32. This view is obviously behind the notion, embedded in the preamble of the Agreement on Agriculture, that when making commitments under the Agreement all WTO Members should have "regard to non-trade concerns, including food security and the need to protect the environment".

33. The most important findings of OECD work on risk management, as well as results of a number of country case studies, were published in OECD (2011).

97. OECD analysis has also shown that it is useful to distinguish three different layers or risk and their relevance for policy action. Limited fluctuations of output or prices are normal business risks that can well be managed privately by farmers. In fact, policies that aim at counteracting them, for example through intervention prices or equivalent measures, can be counterproductive and actually result in greater risk exposure. Catastrophic risks, though, i.e. extreme and infrequent events that affect a large number of farmers and inflict significant damage on them, are beyond the capacity of farmers and markets to cope. They may, therefore, require government action. Examples are cases of severe and widespread drought or outbreaks of a highly contagious and damaging disease. The third category is marketable risk, found in between the layers of normal and catastrophic risks. Normal price fluctuations and hail damage are examples of this risk layer. Farmers can deal with these intermediary risks through market instruments such as insurance, futures markets or cooperative arrangements. Governments are well advised to create the institutional framework under which such market approaches can develop, but are less effective and efficient than private agents at dealing with them through public policy measures. Where government policies cover such marketable risks they are likely to crowd out private activities.

98. In essence then, an important finding of OECD research in the domain of risk management is that well performing government policies focus on assisting farmers in cases of catastrophic risks, and on creating optimal conditions for what private agents can do. As far as catastrophic risks are concerned it is preferable not to leave matters to *ad hoc* responses after a disastrous damage has occurred, but to develop contingency plans that specify in advance the responsibilities and procedures for implementing assistance, and the limits for government action. Explicit criteria for triggering government action are helpful, as is a predetermined definition of the types and maximum volumes of assistance. It is important to avoid moral hazard on the side of farmers. Where subsidies are granted for crop insurance against disasters it is important to avoid the experience made in a number of cases where *ad hoc* assistance was granted over and above the insurance subsidies.

99. Creating optimal conditions for private activity includes education and training of farmers so they are well prepared to manage their normal business risk, for example through diversification. The tax system can also help, for example by allowing producers to average taxable income across a number of years and by providing incentives to build up savings. A legal system that provides sufficient flexibility for production and marketing contracts between farmers and downstream agents can help to spread price risk across the supply chain and to other agents, for example on futures exchanges. Experience gained in a number of OECD countries has generated the insight that income stabilization and counter-cyclical schemes are not efficient tools to manage risks. In this context it is also important to remember an insight gained in OECD work on decoupling, i.e. that risk-reducing forms of support can result in pronounced distortions of markets and trade, and hence cause large welfare costs to the domestic economy and negative international spill-over effects (see above).

100. A controversial subject is the most appropriate response of agricultural policy makers to *societal concerns*. It is somewhat similar to the issue of multifunctionality because concerns often have to do with NCOs related to agricultural production. Animal welfare, environmental implications, genetically modified organisms, quality and safety of food products, social conditions of production are just a few examples of issues where modern societies have concerns, often arising out of widely diverging views on what is right and wrong. Responding appropriately to such societal concerns and identifying the 'best' policies to solve these issues has often proven difficult for policy makers. The OECD has, therefore, dealt with such societal concerns and their policy implications in a number of activities (for example Tothova, 2009, and OECD, 2010b).³⁴ Given the rather different nature of the various societal concerns, the optimal policy responses differ very much. One conclusion, though, that can be generalized is that appropriate measures are targeted

34. Certain aspects related to societal concerns regarding food and agriculture were also dealt with in OECD (1999).

rather than being broad based, and that they do not include support to agricultural output. In most cases some form of regulation or tax is most effective, for example in responding to concerns regarding animal welfare. Food safety concerns are best taken into account through SPS measures. Asymmetric consumer information and concerns regarding social conditions in production may require labelling. In this domain, though, it can be difficult to avoid trade implications. Where societies of nations trading with each other have different preferences and concerns, governments may adopt different regulations regarding processes and production methods (PPMs), or promote a given PPM through subsidies respectively discourage undesirable PPMs through taxes. When these instruments are also applied to imported products there may be conflicts with the principle of non-discrimination. In some cases such conflicts can be avoided or mitigated through other approaches such as labelling or agreements on equivalence or mutual recognition. In other cases, though, the matter will have to be discussed with trade partners.

101. There is no doubt that well targeted and tailored measures require much administrative effort in terms of information collection, decision making, implementation and monitoring. They are therefore likely to involve higher *transaction costs* than broad based measures such as price support. This is often held against targeted measures. OECD has looked carefully into the issue of policy transaction cost, including through empirical case studies of administrative costs resulting from real world agricultural policy measures (OECD, 2007c). The result was that transaction costs of targeted policies can indeed be high, but that the resource savings to be made when policies are well targeted rather than broad based are significantly larger than the extra costs involved in moving to better targeted measures.

102. The fundamental policy principle of addressing issues at the source rather than intervening in markets applies not only to industrialized economies. It is equally valid for developing countries as several OECD studies have demonstrated. It may be tempting to think that *rural development* and *poverty reduction* in rural areas, where over two-thirds of the world's poor live, can most easily be achieved through agricultural price support, for example by imposing tariffs on products considered relevant for livelihood security. Similarly, input subsidies are often considered to be an instrument that can foster both rural incomes and productivity improvement. Yet, as shown in Brooks (2012), both types of measures are too blunt. Price support is not only inefficient, resulting in market distortions and a consequent waste of resources that poor economies cannot afford, it is also ineffective, if not counterproductive, in supporting incomes of rural households as many of them are net food buyers and hence worse off when they have to pay higher prices. Input subsidies have often provided gains to unintended beneficiaries, undermined the development of private market channels and resulted in a heavy burden on the government budget. There are more effective and efficient instruments available. In the short term, well targeted social safety nets can assist the poor. In the medium and longer term it is important to raise productivity and create employment opportunities. A good part of the measures needed are not necessarily agriculture-specific. Improvements in primary healthcare and education, investments infrastructure, security of property rights, sound macro-economic conditions, good governance – all these measures contribute to creating conditions for economic growth. As not all families living in rural areas will find gainful opportunities in agriculture an important form of supporting rural development, paradoxical as it may sound, is the creation of jobs outside agriculture. Policies targeting the situation in agriculture are effective measures such as agricultural research, technology transfer, extension and advisory services.

103. Similar conclusions can be drawn from OECD work on improving *food security*, comprehensively presented in OECD (2013b). Food insecurity is a consequence of poverty, except in emergency situations where physical supplies break down. Tariff protection for staple foods, as sometimes suggested as a means to improve food security, may result in an expansion of domestic output and hence raise *availability* of food, but it does not help poor consumers to gain *access* to the food they need. On the contrary, tariffs raise food prices and hence reduce the purchasing power of consumers. In the short term, social safety net policies targeted to the poor can improve their access to food. In the longer term, what is needed are measures that improve the income situation of the poor. Everything that can help to eradicate

poverty, discussed above, enhances food security, much more effectively than measures operating on food markets. Fostering agricultural development is an important ingredient of a strategy to improve food security, not so much because it enhances domestic availability of food, but because it improves the income situation of families living in rural areas where a large part of food insecure households are located. But there are also many other initiatives, sometimes seemingly distant from the food sector, that can effectively contribute to improving food security. For example, providing safe water supplies and sanitation, and the resulting health benefits, is a much more effective approach to enhancing food security than imposing tariffs on staple foods. Initiatives to raise awareness regarding adequate nutrition and child care can help to overcome nutritional deficiencies. Using international trade to make food available and affordable on domestic markets is beneficial for food consumers, while negative implications of open trade for producers and for market stability can be counteracted through appropriately targeted policies. Developed countries can contribute to well-functioning international food markets by reforming distortive policies and abstaining from policies that add to volatility of world markets. Doing away with support to the production and consumption of conventional biofuels would contribute to making more food available at lower prices to the poor in developing countries.

5.2 *The World Has Changed – Are Past Findings Still Relevant?*

104. The evolution of actual policies in the OECD area described above can be briefly characterized as a gradual decline in the level of farm support and an ongoing shift towards less distorting policy measures. These trends are clearly more noticeable in some countries than in others, but overall the development has gone in this direction. This evolution of policies among developed countries is basically in line with the OECD's insights regarding well performing policies, and as such it does not require fundamental reconsideration of the policy messages developed in the past. Recent developments have, though, raised a number of issues three of which appear to be particularly relevant.

105. First, the decline in the level of farm support observed in recent years is in part the result not of deliberate changes in policy settings but of rising prices on international markets. This is not a problem *per se*. When governments feel that more favourable market conditions provide the opportunity to reduce transfers to farmers, in particular those transfers that are not well targeted, then this is a welcome development. However, the flip side of that coin may turn out to be that farm support rises again if market prices decline. If and when that happens the question to be considered is to what extent well performing policies should shield farmers against changing market conditions. This question will be taken up below in the context of risk management. Another directly related, but also distinct question is whether and how policies can be structured in such a way that they are reasonably immune against ups and downs of international market prices, in terms of budgetary implications and the government's capacity to comply with international commitments such as those accepted in the WTO.

106. Second, a number of issues can be discussed regarding the overall trend towards more decoupled and less distorting policies. For example it is not clear whether the view has gained sufficient ground already among all governments that compensation for policy reform, if granted through direct payments, should support adjustment and be limited in time. It can equally be asked whether the large amounts of public money spent on transfers to farmers are sufficiently targeted to well defined objectives. Where direct payments that had been introduced in the context of policy reforms were terminated recently under favourable market conditions the question arises whether this was based on the view that compensation for past policy reforms was no longer needed and justified, or whether a re-instrumentation was chosen that promises larger benefits for farmers when market prices decline. In other words, behind the apparently positive trend towards lower support levels and less distorting policy structures there may be developments that are not in line with a desirable progression towards better performing agricultural policies.

107. Third, with a declining level of farm support and less distortionary policies in the OECD area the traditional concerns regarding the price depressing implications of rich countries' policies on international markets for agricultural commodities, and the consequent calls for reforming these policies in the interest of well-functioning global markets, are less urgent now than they were in the past. At the same time, government support for the production and consumption of biofuels in the OECD area and the resulting policy-induced additional use of agricultural raw materials as feedstocks has had the opposite effect of raising world market prices of the commodities concerned (OECD, 2008c), possibly by more than the price depressing effect of the traditional support policies. Given that the price level on world markets for agricultural products is anyhow higher now than in the past, the price lifting impact of biofuel support policies has, among others, raised concerns regarding implications for food security in poor countries. It has been commented that critique of such price raising policies and their impact on food security, by OECD as well as other international organizations and of a number of NGOs, appears to be inconsistent with past critical comments regarding depressed prices (Swinnen and Squicciarini, 2012). However, the OECD's policy analysis has not been concerned with identifying a 'desirable' level of international market prices for agricultural products but with assessing any potentially distorting implications of policies, irrespective of whether the resulting bias is downward or upward. From that perspective the changes in the policy landscape and on markets do not require development of a fundamentally new way of looking at things.

108. While support levels have declined in the OECD area, the evolution of policies in major emerging countries has for some time now gone in the opposite direction. As shown above, their levels of farm support are exhibiting a rising trend, and there has also been a tendency to resort to more distorting policy measures. As a result, the centre of gravity in global farm support is shifting from the OECD area to the emerging economies, and possibly also to less developed countries. In addition, some of the emerging economies are large and have sizeable agricultural sectors. This means that substantial sums of money are transferred to agriculture in some of the emerging economies. China's absolute PSE (in USD) is now more than 50% larger than that of the EU, and Indonesia's farm support comes close to that of the USA. At the same time some of the emerging economies are large participants in international trade with agricultural products, be it as exporters or importers. It is conceivable that agricultural policies in emerging and developing countries now have an impact on price formation on international markets that is at least as big as that of OECD countries. For all these reasons the nature and evolution of agricultural policies in emerging and important developing countries has appropriately come into focus in the OECD's work.

109. Policy concerns and objectives in emerging economies in part overlap with those of rich countries, but also entail different priorities and specific weights. For example, food security among poor consumers is a more pressing concern than in most developed countries. General services and development of infrastructure require particular attention. Policy reforms may be needed in several cases, but their nature is much different from the reforms initiated in many developed countries in past decades where much of the focus was on redressing excessive price support. Moreover, the conditions under which policies can be pursued in emerging and developing countries are different from those in rich countries. All this does, though, not mean that the general orientation of the policy analysis conducted in the OECD and of the insights generated is obsolete and has to be replaced by new paradigms. In particular, the fundamental principle that market distortions should be avoided as far as possible is equally relevant outside the OECD area. In fact, avoiding the extra resource costs and consequent welfare losses resulting from policies that unintentionally distort markets is the more important the lower the standard of living is in a given country. Markets are the more distorted the less well policies are targeted and tailored – another important policy principle that has emerged from OECD work on agricultural policies. There is no doubt that this principle applies to emerging and developing countries with equal force. The same can be said about other findings from OECD work on policies in agriculture. The policy issues and empirical cases to which the analysis is applied differ from those in the OECD area. OECD work on agricultural policies in emerging and developing countries, significantly expanded in the past, has already demonstrated

successfully that work done earlier on OECD countries was a sound basis for transferring and adapting insights gained to the conditions prevailing in other parts of the world. Thus the shifting centre of gravity in global farm support does not appear to demand a reorientation of the fundamental findings in past OECD work, but a further continuation of what has already been done in the past, i.e. paying more and more attention to the policy issues on the agenda of emerging and developing countries and to the nature of the policies pursued by them.

110. Do the changes of conditions on global markets for agricultural products that have taken place in recent years require a reconsideration of the insights gained in past OECD work on agricultural policies? Does the higher level of international prices now prevailing warrant a modification of major policy principles suggested in the past? Most of the findings regarding well performing policies relate to the domestic functioning of alternative measures and therefore do not depend on the level of prices on international markets. The desirability of avoiding market distortions and the benefits of employing measures that are directly targeting well defined objectives and carefully tailored are not conditional on high or low world market prices. The conclusions drawn from work on decoupling and multifunctionality are not affected by changes in market conditions. The need for many measures aimed at providing NCOs, in particular environmental protection, to be site-specific rather than broad-based is relevant irrespective of market prices for commodities. What may have changed is the urgency of the need for, and the political economy of, agricultural policy reform. In most OECD countries, price supporting policies and directly output related payments play a somewhat reduced role under current market conditions. How to implement reforms of these policies is therefore a perhaps less pressing issue than in the past. However, growing attention may now have to be paid to policy regimes that more or less automatically re-introduce price supports or equivalent measures if market prices decline again.

111. Policies that have become more critical now under market conditions with high prices are those that tend to raise, rather than depress, international commodity prices. Two outstanding examples are government support for biofuels and all forms of export restrictions. OECD has already done important work in both areas. However, given the importance of these policies for the functioning of world markets, and in particular for food security, there are good reasons to remain active in analysing such policies, if not investing more resources than in the past in them. A few comments on OECD analysis of export restrictions have been made above already. As far as biofuels are concerned, there is still a need for more and better information on the nature and levels of government support in this domain. The database on biofuels policies created in OECD is a good start. However, there are still many blanks in the data supplied by member countries. And what is missing is an OECD estimate of total levels of support in the biofuels sector, similar to that of the PSE, if not even integrated into it. It is clear, though, that significant conceptual problems would have to be overcome in order to produce such estimates. In particular, when estimating the transfers to farmers resulting from biofuels policies it is necessary to estimate their impact on price formation in markets for the feedstocks concerned. This is possible in principle, as shown in past OECD work (OECD, 2008c). There are, though, conceptual problems that have to be considered. Specifically, support to the use of agricultural commodities in biofuel production in a given country provides benefits not only to farmers in that country, but also to those in other parts of the world. Moreover, price effects on commodity markets can be estimated only based on modelling approaches – an element that has, for very good reasons, never been introduced into PSE work (Tangermann, 2005). Yet, given the heightened importance of price-raising policies under current market conditions it is perhaps time to confront such conceptual issues.

112. In a high-price environment there is also need for intensive work on food security issues in developing countries. OECD has been very active already in this domain, and current market conditions do not warrant a reconsideration of the policy conclusions drawn, not the least as a good part of that work was accomplished at a time when food prices on international markets had already reached high levels. It appears desirable to continue, if not intensify, that work. The comparative performance of alternative

policy approaches in emerging and developing countries remains an issue that might benefit from more analysis. For example, India and some G33 countries have expressed pronounced concerns regarding WTO disciplines related to public stockholding for food security purposes. This has been a controversial item both at the Bali Ministerial of the WTO and in the subsequent negotiations in the summer of 2014. To what extent and under which conditions is stockholding of staple foods a well performing ingredient in a country's strategy to improve food security? Another dimension is the contribution that agriculture and agricultural policies in rich countries can possibly make to improving global food security. OECD work has already thrown light on this issue, but its continued prevalence in policy debates in the OECD area³⁵ suggests that continued work on it might be useful.

113. The pronounced volatility that international markets for agricultural products have exhibited in recent years and that may continue to plague these markets in the future is an important concern for agricultural policy makers. It does not affect the validity of the central OECD findings regarding well performing agricultural policies. It does, though, highlight the importance of the results generated by OECD work on risk management as summarized above. However, actual risk-related policies in several OECD countries appear to diverge significantly from the policy messages derived from OECD analysis. Perhaps this situation can be compared with the case of price support policies a few decades ago. In a situation where price support and equivalent measures largely dominated agricultural policy structures in the OECD area, OECD research and its effective dissemination in policy dialogue contributed greatly to helping governments understand the nature of their policies and their undesirable implications. Early work on the benefits of decoupling support from production showed that there was a way out. Many governments finally embarked on that route and engaged in policy reform. As a result, policy structures in the OECD area are now far less dominated by price support and similar measures. Meanwhile volatility has in recent years become a dominant policy concern in several countries, and inefficient risk management policies are widespread. Perhaps the case can be made that analytical work and policy dialogue in the OECD on well performing risk management policies is as important now as work on reforming price support policies was in the past.

6. Implications for Agricultural Trade Negotiations Post-Bali

114. After the failed attempt in 2008 to agree on modalities for new commitments in agriculture and the other subjects of the Doha Round negotiations, the fact that the Bali Ministerial of the WTO in December 2013 managed to arrive at a number of positive decisions ended five years of widespread frustration with a lack of progress in the multilateral trade talks. The most important achievement at Bali was agreement on the package of trade facilitation measures that had been negotiated over the years, an accomplishment that, if put into practice, promised to result in rather practical improvements of trading conditions and corresponding welfare gains in the global economy. However, that Bali achievement fell apart when it proved impossible to find a way of bringing all WTO Members to adopt the protocol on the Trade Facilitation Agreement by 31 July 2014, the deadline agreed by Ministers at Bali. This was another case where disagreement over agricultural matters got in the way of overall progress in WTO negotiations. India and a few other countries would not let the trade facilitation package go forward as long as they felt there was not sufficient progress towards a permanent solution that would address their concerns regarding public stockholding of food, another item on which Ministers had taken a decision at Bali. Thus, a few months after optimism had sprung up among WTO Members at Bali, the mood has suddenly and dramatically turned into deep pessimism. Like the WTO Director General many participants in the WTO business have made it known that they are "very, very concerned". What this will mean for the future of the DDA negotiations is difficult to assess before WTO work has come into full swing again after the 2014

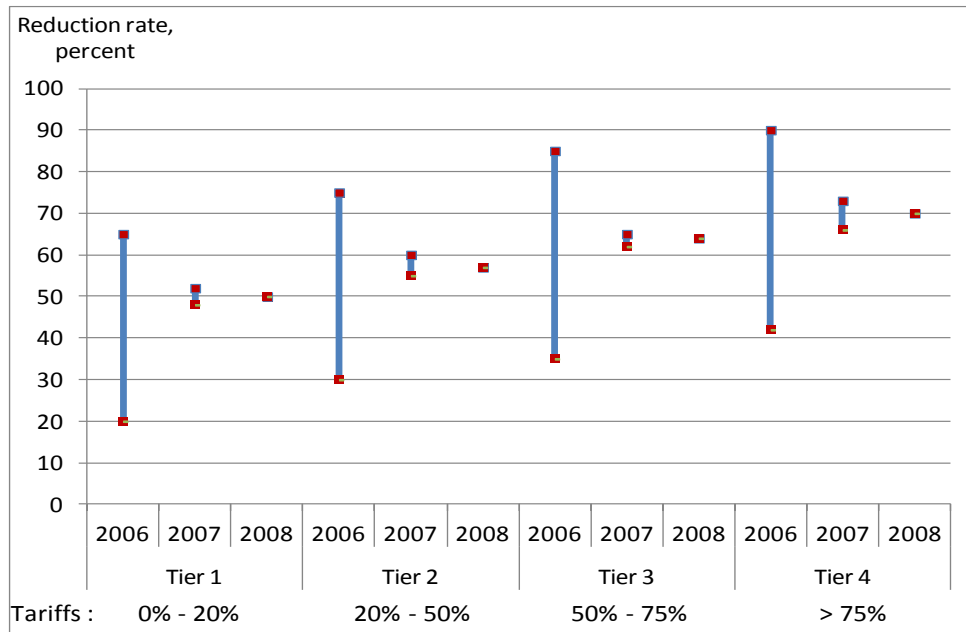
35. See for example the related document recently submitted to EU Ministers of Agriculture by the Italian Presidency of the EU (2014).

summer break. But it appears unlikely that the negotiations, including those on agriculture, will become easier in the future than they were before Bali.

115. On the other hand it could be argued, from the perspective of factual developments since 2008 as discussed in this report, that the fundamentally changed market conditions should now make it easier than in it was in 2008 to find agreement on the core of the draft modalities considered at the time, i.e. the parameters for reduction commitments suggested in Rev.4. The negotiations from which these parameters resulted were conducted in the years before 2008, i.e. at a time when the price spike on world markets for food and agricultural products had not yet occurred and, more important, when it had not yet transpired from market projections that the world appears to have entered into a phase where prices will remain at a higher level for some time to come. The food price spike began in the fall of 2007 and prices reached a first peak in 2008. However, it appears that these changes in market conditions were not really reflected in the reduction parameters considered at the time.

116. This is at least the impression one can gain if one compares, for example, the tariff reductions suggested in the successive draft modalities tabled in 2006, 2007 and 2008 (Figure 6.1). By 2006 the approach considered for tariff reductions in agriculture had stabilized to a tiered formula, with four tiers. The draft modalities tabled in 2006 still contained ranges of suggested reduction rates for each of the tiers (in squared brackets). In the 2007 draft, these ranges were narrowed down considerably, and the 2008 Rev.4 had advanced to the point where only one reduction rate was still suggested for each of the four tiers. In terms of the negotiating dynamics, this evolution indicated good progress towards a common view. However, the orders of magnitude considered for tariff cuts did not change in response to market developments going on at the time. As reflected in Figure 6.1, there was perhaps a slight increase in the magnitude of cuts considered between 2006 and 2007, but the reduction rates suggested in Rev.4, tabled in 2008 at a time when the price spike had already caused much excitement in the 'real world' outside the negotiating rooms, were more or less precisely the mid-points of the ranges considered already in July 2007, i.e. before food prices began to rise dramatically.

Figure 6.1. Ranges of Reduction Rates for Agricultural Tariffs in Developed Countries Suggested in the Successive Draft Modalities of 2006, 2007 and 2008



Note: In the 2006 document TN/AG/W/3 the tariff ranges suggested for tiers 1 to 4 were still 0%-[20-30%]; [20-30%]-[40-60%]; [40-60%]-[60-90%]; >[60-90%].
 Source: WTO documents TN/AG/W/3; TN/AG/W/4; TN/AG/W/4/Rev.4.

117. This has implications for the Doha negotiations on *market access* in agriculture. Tariffs generate a given margin between domestic and international prices. Yet, from the perspective of pursuing a set of well-defined agricultural policy objectives that margin appears less relevant than the level of domestic prices in relation to other domestic variables. More specifically, when a government sets a given tariff level it must at least implicitly have some idea of what a 'satisfactory' domestic market price should be. What is considered a 'satisfactory' domestic price may depend on views regarding matters such as a target level of producer income, a desirable degree of self-sufficiency or the minimum producer revenue believed to be necessary in order to achieve survival of the domestic industry concerned. If it later turns out that the international market price attains a higher level than expected when the tariff was originally set, then the 'satisfactory' domestic price can be achieved with a lower tariff. From that perspective, if the level of world market prices for agricultural commodities turns out to be around 30% higher than originally expected as suggested above, then *ad valorem* (equivalents of) tariffs could be reduced by around 30 percentage points without threatening attainment of 'satisfactory' prices on domestic markets. On that basis it could be argued that the now higher level of international prices should reduce the perceived 'need' for tariff protection – and hence facilitate agreement on the tariff cuts considered in 2008 when it was not yet obvious that the high level of international market prices would last for quite some time. In fact, with international market prices about one third higher than probably expected in 2008, tariffs could even be cut by rates larger than what appeared potentially acceptable in 2008.

118. This argument does, though, not take into account that some of the same factors that have pushed up international market prices may also have raised the target level of domestic prices. As suggested above, one reason behind the step increase in world market prices for agricultural commodities that appears to have occurred after 2006 was a cost push caused by rising energy prices. One can probably argue that this cost push has also raised the target level of domestic prices by the same order of magnitude. Other factors behind the increase in international market prices (such as resource constraints, slowdown of

productivity growth, demand expansion) should not have changed the level of domestic prices that is considered 'satisfactory' from a producer point of view.³⁶ Thus, if one assumes that the cost-push element was responsible for about two-thirds of the around 30% increase in the global level of agricultural commodity prices experienced after 2006³⁷, then tariffs could be reduced by about ten percentage points and still achieve the originally intended target level of domestic prices.

119. Another issue of relevance in the DDA negotiations on market access in agriculture is the large binding overhang of tariffs that has accumulated in several countries (see above, Section 3.2). On a global scale, tariffs applied for agricultural products have come down to about half of the tariffs bound (Bureau and Jean, 2013b). Tariff cuts that do not go beyond 50% would, therefore, in many cases not result in any actual improvement of market access, but only eliminate the binding overhang. An additional reason that speaks in favour of considering relatively large tariff cuts in the DDA negotiations is the growing significance of RTAs. A disadvantage of these preferential arrangements is their discriminatory nature, potentially resulting in trade diversion at the cost of third parties. The danger of this happening is the less the lower the level of non-preferential tariffs.

120. The changes in market conditions that have taken place since 2008 should also facilitate the DDA negotiations on *export subsidies and equivalent measures*. The higher the level of world market prices, the less the 'need' for supporting exports. The decline in export subsidization actually observed in recent years (discussed above) is in line with that view. It should, therefore, be easier now than it was in 2008 to find agreement on an elimination of export subsidies and equivalent measures.

121. The situation is somewhat different when it comes to the *domestic support* commitments that would result from the rules and parameters suggested in Rev.4. One important element of domestic support in several countries is market price support (MPS). Under the AoA (and under Rev.4), MPS is defined relative to fixed external reference prices, and hence the increase in actual world prices has not reduced the calculated level of MPS. Where governments raised applied administered prices in response to rising international market prices, the MPS to be considered relative to WTO commitments has actually increased, even if the applied administered prices were increased less than the rise in world market prices. This is an issue of concern, for example, to India and is (indirectly) reflected in the Bali decision on public stockholding for food security purposes.

122. The rationale for including the MPS element in the WTO rules for domestic support, in addition to tariff bindings, was debated early on, as was the use of fixed external reference prices (see, for example, Josling, Tangermann and Warley, 1996). With the significant increase in the level of world prices in recent years, the external reference prices based on the situation in 1986-88 have become entirely outdated. The situation is particularly problematic where countries maintain applied administered prices that are below currently prevailing world market prices but above the fixed external reference prices. In such cases, price support is not provided in an economic sense, but the countries concerned may still be in violation of their domestic support commitments under the WTO. This is one dimension of the food security stocks issue pursued by India and a few other countries at Bali and in the subsequent negotiations.³⁸ At some point the use of MPS based on fixed external reference prices will have to be reconsidered in the WTO.

36. One could debate the implications of resource constraints for 'satisfactory' producer prices: where producers own the resources concerned (land, water) they benefit from rising rents.

37. The numbers suggested here are only illustrative, but their order of magnitude is derived from Outlook results regarding the rise in oil prices and the impact of oil prices on agricultural commodity prices (on the latter, see Figure 1.17 in OECD-FAO (2012)).

38. For a discussion of the "Indian problem", see Tangermann (2014) and the literature referenced there. Most of Sections 2 and 3 and a few other parts of the present report have been adopted in that paper.

123. In some other regards the changes that have taken place in recent years and which are discussed above should now make the rules and parameters reflected in Rev.4 appear less restrictive, and hence more easily acceptable, than in 2008. Where countries use deficiency payments towards a given target price (or other payments of a similar nature), the level of domestic support is related inversely to movements of world prices and hence has decreased as a result of the increased price level on international markets. Several countries, in particular in the OECD area, have also continued to reform their policies and in the process reduced levels of support. Moreover, in a number of cases countries have trimmed down their notified levels of MPS by eliminating the notion of administered prices.

124. When looking at the combined implications of these and other factors for domestic support levels notified recently to the WTO, Brink (2014) finds that agricultural policies in most of the 19 countries (both developed and developing) included in his study would not have to be changed if an agreement along the lines of Rev.4 were to be concluded. This means that the domestic support provisions suggested in Rev.4 should also be not too difficult to accept in the negotiations.

125. An issue that may need more attention than so far reflected in Rev.4 is the treatment of *export restrictions*. In the Doha negotiations up to 2008 this issue played no more than a rather limited role. In 2008 and subsequent years use of export restrictions expanded very much (see above), and it became obvious how detrimental export restrictions imposed in a period of spiking prices can be, in particular for food security in poor countries. The draft modalities tabled in 2008 do not appear to have responded to that experience.

126. It can also be argued that the greater volatility of agricultural markets and, in response to it, the rising importance of policies aimed at *risk management* may require consideration in the Doha negotiations on agriculture, over and above of what is already reflected in Rev.4.

7. Conclusions

127. When the Doha negotiations resumed after the December 2013 Ministerial at Bali, in agriculture one of the major questions considered was whether conditions in global agriculture had changed so much that Rev.4, i.e. the draft modalities for agriculture tabled in 2008, could no longer serve as a useful reference for the talks. Indeed, as shown in this paper the agricultural world has changed significantly since 2008. In short, international market prices of agricultural commodities have exhibited a step increase in the order of magnitude of one third, and there is some likelihood that they will continue to exhibit more volatility than in the past. Farm support has declined in the OECD area, and the policy structure has shifted towards somewhat less distorting policies. Among emerging countries, on the other hand, farm support is on the rise, and it also appears to become more distortionary. Tariff structures in many countries are characterized by a noticeable degree of binding overhang. Export subsidies have come down greatly, and other export support measures with equivalent effect appear to have also been cut back somewhat. In other words, in the domain of export competition there is also a large degree of binding overhang relative to WTO commitments. As far as domestic support commitments under the AoA are concerned there is binding overhang not only relative to existing AoA commitments, but even the reductions implied in Rev.4 would leave considerable amounts of water in most countries' schedules.

128. For the WTO negotiations on agriculture all this means that the "continuation of the reform process", mandated in the AoA and folded into the Doha talks, is not only even more important now than it was in 2008, but that from a policy perspective it should also be more easily achieved. More specifically, the rule changes and reduction parameters suggested in Rev.4 should appear more easily acceptable now than they may have been in 2008. In fact, larger reductions may now be needed to squeeze enough water out of the resulting commitments.

129. The changes that have taken place since 2008 and the experiences made in the last few years suggest that two issues need more attention than they had received in the negotiations up to 2008. First, export restrictions have not only been more frequently used, in particular in response to spiking prices in 2007-08 and subsequent years, their problematic impact, in particular on food security in poor countries, have also become more apparent. It appears highly desirable to establish more effective disciplines on these measures in the WTO. Second, heightened market volatility has sparked rising interest in risk management policies. Treatment of these policies in AoA rules on domestic support may have to be reconsidered. An additional reason to do so is the result of OECD work that has shown that such policies can have rather strong distortionary impacts on markets and trade.

130. OECD has done a large amount of work in analysing the impacts of a wide variety of different policies on markets and trade, and important elements of the findings are summarized in this paper. Based on that work and on research regarding the effectiveness and efficiency of alternative policies as well as on best practice among member countries, OECD has engaged in policy dialogue. Most of the OECD's findings regarding well performing agricultural policies have not only stood the test of times. They also continue to apply under the changed conditions in global agriculture. What might be useful is a somewhat strengthened emphasis on some issues that were already addressed in the past which, though, may have become even more important under the conditions now prevailing in global agriculture. Two examples may illustrate this point. First, biofuel support policies and their impacts on global consumption of agricultural commodities have become even more problematic in times of generally high prices on agricultural markets. Second, policies to support risk management have not only attracted rising attention in a more volatile market environment. It also appears to be the case that the important findings OECD research on risk management has generated have not yet sufficiently found their way into actual policy making. Perhaps the case can be made that OECD research and policy dialogue in this area is now as important, and should hence receive as much attention, as work on decoupling did in the last decade or so.

131. New developments also raise new challenges for policy research. In this paper, a number of issues are suggested that might benefit from OECD work.

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