Agricultural Competitiveness White Paper Submission - IP699
Patrick Byrne
Submitted 15 May 2014

Submission to

The Agricultural Competitiveness Inquiry

Part 1

Opportunities from correctly assessing the value of the domestic and export markets for Australian agriculture

By Patrick J. Byrne

National Vice-President of the National Civic Council.

May 15, 2014

Executive Summary

Agricultural exports are valued at 22% of agriculture as measured at the farm gate, meaning that more than three-quarters of farm gate product is sold into the domestic market.

The 60% export figure is fallacious, because it calculates many value-added food exports as a percentage of raw farm product valued at the farm gate. In statistics, this is the fallacy of comparing apples with oranges.

Focusing policy more at the domestic rather than the export market will provide many benefits.

- Agriculture is a high-risk industry for which governments have extensive policy instruments to manage risks in the domestic market, but few policy tools to manage risks on global markets.
- Reducing risk in a high-risk industry like agriculture will increase profitability, reduce farm debt, attract new investment, attract a new generation of farmers, increase tax revenues and boost exports.
- Doubling farm exports from a base of 22% requires about one-third the investment, compared to doubling exports from a base of 60% of agriculture.

Recommendation: That Agriculture Minister undertake to recalculate the value of agriculture into the domestic and export markets.

This process should calculate direct food and fibre contributions to the domestic and export markets, using the methodology established by Associate Professor Guy West in his paper, *Decomposition of Exports and GDP into Direct and Indirect Industry Contributions (2002).*

Does Australia export 274 per cent of its wine production?

by Patrick J. Byrne, national vice-president of the National Civic Council.

News Weekly, April 26, 2014

If this headline article sounds ridiculous, you are correct.

But this figure is symptomatic of the problem faced by Tony Abbott and Agriculture Minister Barnaby Joyce in setting new policy directions for Australian agriculture from their current inquiry into agricultural competitiveness.

In recent times, our governments have been told time and again by their various agencies that Australian farmers export 60 per cent of their product. The problem is that, as the following example of wine exports illustrates, they have calculated farm exports using a statistical fallacy.

To explain:

All high school students studying statistics are taught that you can only compare like with like, e.g., apples with apples, and oranges with oranges. But you cannot compare apples with oranges, otherwise you end up with nonsensical conclusions.

It seems that Australia's leading government agencies that advise our governments on matters of agricultural markets lack this basic understanding. These include the Department of Foreign Affairs and Trade (DFAT), the Australian Productivity Commission, the federal Department of Agriculture, Fisheries and Forestry (DAFF) and the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), which is part of DAFF.

Back in the 1990s, these agencies, along with the National Farmers Federation (NFF), claimed that we exported 80 per cent of agricultural product.

Since then, these agencies and our politicians have presented a confused picture. A few examples:

In 2003, Patrick Secker, then a South Australian federal Liberal MP, told a government inquiry that we "export 80 per cent of our agricultural produce. It is not as if we have a shortage of food here in Australia."[1]

In 2009, DFAT declared that Australia exported "around two thirds [66 per cent] of total production".[2]

That same year, the then Labor Minister for Agriculture, Tony Burke, told ABC TV's Landline program: "We have to remember with Australia, we're an exporting nation when it comes to agriculture; 60 per cent of what we produce gets eaten in other countries".[3]

In February this year, the Australian government's Agricultural Competitiveness Issues Paper,

---

[1] Patrick Secker MHR, House of Representatives Sanding Committee on Agriculture, Fisheries and Forestry, Sydney, New South Wales, August 15, 2003.

[2] Agriculture and the WTO 2009,Department of Foreign Affairs and Trade (DFAT), Commonwealth Government, Canberra, Australia.

[3] Reporter Prue Adams, "ABARE market", Landline, ABC TV (Australian Broadcasting Corporation), March 8, 2009. URL: www.abc.net.au/landline/content/2008/s2509712.htm

produced for the current agricultural competitiveness inquiry, says that "around 60 per cent of agricultural production" is exported (p.18), and was worth $32.4 billion in 2010–11 (p.9 diagram).[4]

The Productivity Commission has further confused the calculations. In a 2005 paper on Trends in Australian Agriculture, it declined to estimate an export figure, saying that "the variety of methodologies used to estimate exports (and the assumptions required) means that any estimates of the proportion of agriculture output which is exported, or the relative sector contributions to total exports, will only be an approximation".[5]

The Productivity Commission was "passing the buck" onto the Australian Bureau of Statistics (ABS), which warned in a 2002 paper: "Analysis of data about the exports of agricultural commodities requires an understanding of the concepts, classifications and methodology."[6]

Which then poses the question, if the Productivity Commission could not even produce a figure on how much of Australia's agriculture is exported, then on what basis did it rely on to assume that most of Australia's agriculture is exported, and that future farm policy should be focused on the export market?

Confusion reigns. Yet isn't it important to know just how much is exported by a major sector of the Australian economy?

The Australian Farm Institute tell us, in a detailed 2004 study, that agriculture and its dependent input and output industries are worth 12.2 per cent of the Australian economy, and employ over 17 per cent of the labour force.[7] That's much bigger than Australia's entire manufacturing sector.

Consequently, shouldn't the starting point of policy be a clear understanding of what is the biggest and most important market for agriculture and its dependent industries?

How is it that our government is so confused over the relative sizes of the domestic and export markets for agricultural production?

The source of this problem is revealed in the "issues" paper produced for the current agricultural competitiveness inquiry to which we referred earlier. It uses figures from the Department of Agriculture's publication, *Australia's Agriculture Fisheries and Forestry: At a Glance 2012*.[8]

It says that the total value of Australian agriculture in 2010-11, as measured at the farm gate, is $48.2 billion. This included the total value of all farm product as it leaves the farm, before these products are transported, processed, and either sold on into the domestic market or exported. This figure includes the value products such as live cattle, sheep and pigs, wheat, raw cotton, sugar

---

[4] Australia's Agriculture, Fisheries and Forestry: At a Glance 2012 (Department of Agriculture Fisheries and Forestry, 2013): pp.18, 9, cited in Commonwealth of Australia 2014, Agricultural Competitiveness Issues Paper, Canberra, February 2014, Commonwealth of Australia 2014, p.9. URL: http://agriculturalcompetitiveness.dpmc.gov.au/sites/default/files/issues_paper.pdf

[5] Trends in Australian Agriculture, Research Paper, 2005, Productivity Commission, Canberra, p.57.

[6] Understanding Agricultural Export Data, 1301.0 — Year Book Australia, 2002.

[7] Australia's Farm-Dependent Economy: Analysis of the Role of Agriculture in the Australian Economy (2005).

[8] Agricultural Competitiveness Issues Paper, Canberra, February 2014, Commonwealth of Australia 2014, citing figures from Australia's Agriculture, Fisheries and Forestry: At a Glance 2012, Department of Agriculture Fisheries and Forestry, 2012.

cane and wine grapes.

Then our government agencies calculate the value of exports to be $32.4 billion, to determine that "60 per cent" of agriculture is exported.

What do our government agencies include in agricultural exports? They add together:

• The value of wheat on the docks, after it was valued-added by transport and storage;

• Beef, veal, sheep meat and pork, after they were value-added at the abattoirs where livestock is processed, packaged, stored then transported to the docks, after leaving the farm;

• Cotton, cotton seed and cotton-seed oil, which are products derived from cotton being ginned and cotton seed being processed and stored, then exported;

• Raw sugar, which is milled from sugarcane produced on the farm; and

• Wine, which is more than six times the value of the wine-grapes produced by farmers.

Herein lies the problem. It is a statistical fallacy to compare the value of processed products exported with the value of unprocessed products at the farm gate. This is like comparing apples and oranges.

To gain a further insight into this problem, let us look at what happens when we apply this faulty statistical analysis to the grapes and wine industry.

In 2010-11, the value of wine grapes was $712 million.[9] The export value of wine made from these grapes was $2.0 billion.[10]

So what percentage was exported?

Using the method adopted by our government agencies, wine exports are calculated by using the value of exports over the value of wine-grape production — that is, 274 per cent!

Ridiculous? Yes.

Let's look at a second example. Consider what happens if we use the same flawed method used by our government agencies, this time to calculate the value of agriculture sold into the domestic market.

The value of raw farm product at the farm gate — such as wine grapes, wheat, raw milk, live cattle, sheep and pigs — comes to $48.2 billion.

According to the ABS, after processing this food, Australians in 2009-10 spent $124.5 billion buying food and beverages,[11] after allowing for about $11.3 billion of imports.[12]

---

[9] Australian Wine Grapes, Research Report 13.14, 2011-12, Tim Caboche et al., ABARES, December 2013, p.10.

[10] Australia's Agriculture, Fisheries and Forestry: At a Glance 2012, Department of Agriculture Fisheries and Forestry, 2012, p.9.

[11] ABS Household Expenditure Survey, Australia: Summary of Results, ABS 2009-10–6530.0.

[12] Figure 1: Value chain for food in Australia, Agricultural Competitiveness Issues Paper, Canberra, February 2014, Commonwealth of Australia 2014, p.9.

This figure, which calculates what Australians spend on food, includes the value of wine from wine-grapes; bread from wheat; cheese and yoghurt from milk; and processed beef, lamb, mutton and pork products from livestock sold at the farm gate; etc.

By comparing the value of all these processed food items that are sold to Australian consumers with the value of the raw foods sold at the farm gate, we calculate that 258 per cent of agriculture is sold into the domestic market!

Clearly, this is a fundamentally flawed methodology.

So how can this problem be fixed?

In May 2000, economists working in the area of agricultural and regional economics, and three officials from the ABS, met in Brisbane's old Customs House to solve this problem. On May 9, they issued a joint statement called the Customs House Agreement,[13] which declared that direct exports from the farm gate "were 22 per cent of the gross value of production" (that is, comparing apples with apples) and that exports at first-stage production, such as sugar cane turned into raw sugar, "accounted for about 25 per cent of exports" (that is, comparing oranges with oranges).

Further, they said, the 25 per cent export figure had "been essentially unchanged for 30 years or so" and that "the ABARE and NFF (80 per cent) export figure has no basis of fact".

Today, our major government agencies claim that 60 per cent of agriculture is exported. This figure has no more validity than the 80 per cent export figure they were claiming in the 1990s.

Consider our Commonwealth government to be like a big multinational company managing policies that determines the profitability of thousands of small companies (farmers) that produce $48.2 billion worth of raw product. That product is then processed into goods worth about $156 billion to the Australian economy. Together, farmers and their dependent industries employ 17 per cent of the Australian labour force.

Surely managing such a huge sector of the economy requires first that the government establishes what are the relative sizes of the export and domestic markets.

Could you imagine a big Australian multinational mining company thinking that its biggest buyer was, say, New Zealand, when in fact it was China?

Misunderstanding the primary market for Australian agriculture has led to a whole range of other misconceptions about agriculture and led federal and state parliaments into policies that harm rather than help our farmers.

For example, we are told that because we export twice as much as we consume off the farm, that we in fact feed 60 million people. But do we really do so if we export only about 22-25 per cent of our agriculture?

Further, federal and state government are focused on building our export markets for agriculture. That is fine, but shouldn't there now be a much greater focus on policies for the domestic market, if in reality 75-78 per cent of agricultural product is sold into the domestic market?

---

[13] The Customs House Agreement, May 9, 2000, at the old Customs House, Brisbane.

To that end, shouldn't there be more concern about halting dumped imports and about the ever-growing concentration of economic power wielded by processors and supermarkets compared to the diminishing ability of farmers to collectively bargain a price for their product?

Getting the figures right on Australia's export and domestic markets will yield benefits to farmers, consumers and governments.

For example, if we export only 22 per cent at the farm gate, then it will require much less investment to double farm exports than if we were exporting 60 per cent of agriculture.

Getting the policy settings right is important to restoring farm profitability. That will then attract more investment into agriculture, boost profits, reduce burgeoning farm debt, and raise more tax revenue for governments.

Finally, agriculture is a high-risk industry that is a major contributor to the Australian economy.

It is much easier to manage these risks if the primary market for agriculture is the domestic market.

This is because governments have a wide range of policy instruments to manage risks in the Australian economy, but very few policy instruments to manage risks on world commodity markets.

In conclusion, a sounder methodology for calculating the true value of agriculture into the domestic and export markets is available to our government agencies in order to help governments develop new and better policy direction for Australian agriculture.

The current inquiry into agricultural competitiveness is an important opportunity to adopt that methodology and, from there, to recognise the opportunities the will benefit farmers, consumers and governments by getting future policies aligned more accurately with the domestic market for agriculture.

Sorting out the confusion over Australia's agricultural exports

by Patrick J. Byrne national vice-president of the National Civic Council.

News Weekly, May 10, 2014

There is widespread confusion over how to measure the proportion of Australia's agricultural output that is destined for export.

In the last issue of *News Weekly* (April 26),[14] we asked whether exports are worth 80 per cent, 70 per cent, 60 per cent or just 25 per cent of the earnings from agriculture.

It was pointed out that there was a problem with the estimates produced by leading government

[14] Patrick J. Byrne, "Does Australia export 274 per cent of its wine production?", News Weekly, April 26, 2014. URL: www.newsweekly.com.au/article.php?id=56558

bodies such as the Department of Agriculture Fisheries and Forestry (DAFF), the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), which is part of DAFF, and other agencies.

As recently as February this year, the Agricultural Competitiveness Issues Paper produced figures for the current agricultural competitiveness inquiry, which estimated that "around 60 per cent of agricultural production" is exported and was worth $32.4 billion in 2010-11.[15]

But in arriving at this figure the paper wrongly compared the value of exported wine with the value of unprocessed wine grapes. When one uses such calculations, one ends up with the astonishing conclusion that Australia was exporting 274 per cent of its wine production!

This calculation is based on the old statistical fallacy, which says that it is invalid to compare apples and oranges. Comparing dissimilar items produces only meaningless results. Yet official government papers compare the value of wine with the value of unprocessed grapes as if they were the same thing.

On further examination, it appears that the wine industry is not the only farm sector whose exports ABARES and DAFF show as exporting more than 100 per cent of their production.

The same flawed methodology has been used to assert that Australia exports 60 per cent or more of its total agricultural produce.

So how is it that there has been such confusion on agricultural exports for decades? After all, we don't seem to have the same problem when calculating minerals exports.

Our government agencies clearly understand the difference between (a) the mining of minerals and coal, (b) the smelting of minerals into metals, and (c) the manufacturing of these metals into products such as motor vehicles.

They separately value each of the minerals produced by our mines (iron ore, copper ore, etc), then the value added to these minerals by smelters (iron, steel, copper), then the further value added when these metals are manufactured into motor vehicles and the like.

This is an example of the "industry production method" of calculating the value of minerals and related manufactured products used at successive stages of the production process — in this example, from the mine to motor cars.

Our government agencies don't lump together minerals, metals and motor vehicle production and then call it "mineral production".

Yet this is what they have been doing when measuring production values in agriculture and its related industries. They have lumped together (a) farm-gate production (wheat and sugar cane), (b) first-stage manufacturing (flour, raw sugar, refined sugar), (c) final-stage manufacturing (bread, biscuits, cakes) and then call it "food production". Then they have compared "food production" exports with total agricultural farm-gate production.

This is like comparing apples and oranges. It leads to meaningless statistics and damaging

---

[15] Australia's Agriculture, Fisheries and Forestry: At a Glance 2012 (Department of Agriculture Fisheries and Forestry, 2012), cited in Commonwealth of Australia 2014, Agricultural Competitiveness Issues Paper, Canberra, February 2014, Commonwealth of Australia 2014. URL: http://agriculturalcompetitiveness.dpmc.gov.au/sites/default/files/issues_paper.pdf

agricultural policies.

This mistake occurs because our government agencies have chosen to combine the value of unprocessed and processed "food products" rather than measuring the value of "industry production" at each stage in the production chain, which is the conventional method for making export and domestic market comparisons.

The problem and the solution become clearer when we examine some of Australia's 53 agricultural industries and their vast array of dependent manufacturing industries.

Consider wheat and sugar cane. People don't eat wheat and sugar cane. Wheat and cane are manufactured into flour and sugar. Even then, people don't eat raw flour and most don't eat sugar straight. Rather, people eat manufactured biscuits and cakes made from flour and sugar that have been milled from wheat and sugar cane.

Consider cattle. People don't eat cattle. Abattoirs process live cattle into beef, and butchers prepare the final cuts. Then people eat beef cooked at home or at restaurants.

Consider apples. They can be considered food in several ways. Some are sold direct as eating apples. Others are manufactured and sold as canned apples, then as manufactured apple pies. Others are crushed to manufacture apple juice, apple cider or apple cider vinegar.

Consider vegetables. Some are sold fresh to consumers. Others are manufactured into canned soups or into frozen packaged vegetables. Then these frozen or fresh vegetables are combined with flour and dairy products to produce pies.

The stages of food production are as distinct as the three stages of mining, smelting and motor vehicle manufacturing.

Figures from the Australian Farm Institute's paper, Australia's Farm-Dependent Economy (March 2005),[16] illustrates the vast difference between the farm-gate value of agricultural production and the value of food, beverages and fibre products after they have moved through the manufacturing and distribution chains to the domestic consumer or for export.

The value of agricultural output at the farm gate is only 3 per cent of the Australian economy (gross domestic product). But after the various input and downstream manufacturing industries are included, the final value at the end of the production chain is 12.2 per cent of the economy — about $190 billion in today's figures.

This also illustrates why agriculture is called a "primary industry" — it feeds a plethora of secondary industries that can quadruple the value of the farm-gate product.

In the previous issue of News Weekly, it was pointed out that seven economists — three from the Australian Bureau of Statistics and four academic economists who were input-output specialists — produced what became known as the Customs House Agreement in Brisbane in 2000.[17]

These economic specialists agreed that only 22 per cent of Australian farm produce is sold directly

---

[16] Australia's Farm-Dependent Economy: Analysis of the Role of Agriculture in the Australian Economy (Australian Farm Institute), March 2005, pp.1-76. URL: www.farminstitute.org.au/publications-1/research-reports/australias-farm-dependent-economy-analysis-of-the-role-of-agriculture-in-the-australian-economy

[17] The Customs House Agreement, May 9, 2000, at the old Customs House, Brisbane.

overseas as measured at the farm gate.

So what do farmers, manufacturers, government agencies and politicians need to learn in order to make policy?

They all need to understand — from the ABARES farm-gate figures (2010-11) and from the Customs House Agreement's conclusion that only 22 per cent of farm-gate agriculture is directly exported — the following points:

• $48 billion is the figure for total farm output at the farm gate.[18] That is how much our farmers receive for all their wheat, cattle, wool, lambs, milk, fruit and vegetables, etc.

• $10 billion is exported, as measured at the farm gate, before any processing (e.g., wheat, sugar cane, live cattle, eating grapes, etc). That is how much farmers receive from direct farm-produce exports.

• The remaining $38 billion of farm produce is used domestically. Some (e.g., lettuce, eating grapes) will be retailed to domestic consumers "as is". The rest is manufactured (e.g., to flour or cakes or pies). Food manufacturing sells most of its output to Australia's domestic market and exports the remainder.

It is in untangling the "farm share" of "food manufactures" where problems arise if analysis is inadequate. The details are important and require careful analysis.

This is where the skills of economists who specialise in input-output analysis and the national accounts are called into service. They know that the valid methodology for such comparisons requires measuring "industry output values" and value added for each of Australia's 53 rural industries, for each of the food manufacturing industries and other players in the food production chain.

They know that it is important to measure for each of Australia's 53 rural industries the value of farm-gate production that is destined for export. They also know how to allocate competing imports.

The value of farm-gate products destined for export can be calculated by specialised methods and conventions. These methods are used by every other country in the world to calculate the proportion of agriculture that is exported, but not Australia.

Consider wine grapes. Given that about 45 per cent of Australian wine was exported in 2011-12,[19] then, of the $712 million in wine grapes sold to wineries,[20] $319 million is destined for export. This

---

[18] Australia's Agriculture, Fisheries and Forestry: At a Glance 2012 (Department of Agriculture Fisheries and Forestry, June 2012): p.6. URL: www.daff.gov.au/__data/assets/pdf_file/0003/2161173/at-a-glance-june2012.pdf

[19] "Domestic sales value of Australian wine", 1329.0 – Australian Wine and Grape Industry, 2012-13, Australian Bureau of Statistics (ABS), December 5, 3013. URL: www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/1329.0Main%20Features22012-13?opendocument&tabname=Summary&prodno=1329.0&issue=2012-13&num=&view=

Australia's Agriculture, Fisheries and Forestry: At a Glance 2012 (Department of Agriculture Fisheries and Forestry, June 2012): p.9. URL: www.daff.gov.au/__data/assets/pdf_file/0003/2161173/at-a-glance-june2012.pdf

[20] Tim Caboche et al., Australian Wine Grapes: Financial and Business Performance of Wine Grape Growers 2011-12. Research by the Australian Bureau of Agricultural and Resource Economics and Sciences

$319 million is what wine-grape farmers receive for the proportion of their grapes that are exported as wine.

Following this "industry production method" involves detailed determination of industry output values and value added for the various farm, manufacturing and related industries. It eliminates the problems associated with the ABARES methodology.

It is the standard method used in calculating the nation's national accounts. It is used to measure and distinguish the value added by the minerals industry, the smelting industry and the manufacturing industry when it produces motor vehicles.

The Customs House Agreement, in 2000, used peer-reviewed research that applied industry production methods to conclude that:

• exports measured at the farm gate were "22% of the gross value of farm production";

• adding first-stage production sees around a quarter exported, and this figure has "been essentially unchanged for 30 years or so"; and

• "the ABARE and NFF (80%) export figure has no basis of fact".

Subsequently, Dr Guy West, an associate professor at the Centre for Economic Policy Modelling at the University of Queensland, produced a second peer-reviewed paper on this important issue, entitled "Decomposition of exports and GDP into direct and indirect industry contributions," *Australasian Journal of Regional Studies,* vol, 8, no. 2, 2002.[21]

His paper explained in depth that the methodology for calculating "estimates of the direct and indirect industry contributions to GDP, of which exports are a part, [and] which are consistent with the national accounts".

Applying this standard methodology, Dr West's calculations came to the same conclusion as the Customs House Agreement as regards direct exports.

He said that "the direct value of goods and services leaving the farm gate and destined for the export market" is 22 per cent, which is consistent with the national accounts data.

West then used a more sophisticated method than in the earlier study to estimate the "indirect" agricultural exports after processing. Combined, these direct and indirect exports accounted for 26.5 and 27.6 of value added in the two years analysed (1993-94 and 1996-97).

Dr West, an input-output analyst of international standing, also concluded that "the ABARE figure of 60–70% [exports] is clearly unsupportable, and simply defies both economic logic and the national accounts data".

Why is it important to calculate a true value for farm exports?

(ABARES): Research Report 13.14, 2011-12, December 2013, p.10. URL: http://data.daff.gov.au/data/warehouse/9aas/2013/AustWineGrapesFinAndBusPerf/AustWineGrapesFinAndBusPerf_v1.0.0.pdf

[21] Guy West, "Decomposition of exports and GDP into direct and indirect industry contributions", Australasian Journal of Regional Studies (Brisbane), vol. 8, no. 2, 2002, pp.143-164. URL: www.econbiz.de/Record/decomposition-of-exports-and-gdp-into-direct-and-indirect-industry-contributions-west-guy/10001785259

Agriculture can be a high-risk industry. Risks are needlessly increased and incomes depressed if the markets for farm produce are not properly understood. Such has been Australia's experience. Oversimplification, flawed policy analysis and bureaucratic denial need to rectified if risks and incomes are to be returned to reasonable levels.

When around three-quarters of all farm value-added is actually associated with domestic activities, then governments have a wide range of policy instruments available to help manage these risks in the major market for farmers.

In contrast, governments have few effective external policy options with which to manage risks for products sold into volatile global markets.

Differentiated strategies are required to accommodate the needs of highly exposed exporting sectors (such as wheat-growing and sugar-manufacturing) — and also for those facing significant import or supply chain "imperfections".

In conclusion, it has been more than a decade since a valid methodology has been used to calculate the true value of direct farm-gate production for Australia's domestic and export markets. Policy settings have not been adjusted. It is high time they were.

The current agricultural competitiveness inquiry provides the opportunity to update these figures using the industry production methodology to evaluate agricultural markets.

More competent analysis will enable industry and government to develop new policies with which to manage farm risks and restore higher investment and profitability to the farm sector.

Recommendation: That Agriculture Minister undertake to recalculate the value of agriculture into the domestic and export markets.

This process should calculate direct food and fibre contributions to the domestic and export markets, using the methodology established by Associate Professor Guy West in his paper, *Decomposition of Exports and GDP into Direct and Indirect Industry Contributions (2002).*