EXPORT PROMOTION

A Decision Support Model Approach

Editors

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Chapter 6

Realistic export opportunities and export potentials: a comparison using DSM results for Belgium, South Africa and Thailand

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6.1 Introduction

This chapter reports on the 2007 realistic export opportunities (REOs) of Belgium, South Africa and Thailand, according to the latest run of the DSM, and compares the results. As the same macro-economic and international trade data are used, a comparison can be made between these results. More specifically, this chapter will concentrate on a comparison of the REOs of Belgium, South Africa and Thailand according to the import market characteristics and the mentioned three countries' market position in the respective import markets. In addition, the broad product composition of the list of REOs at HS 2-digit level¹ will be compared and contrasted with the REOs for which the three countries' comparative advantage (measured using Balassa's revealed comparative advantage index RCA, see Balassa, 1965) is sufficiently large to warrant relatively rapid export success (see Chapter 4 section 3.4). The REOs without taking the exporting country's comparative advantage into account can be considered as potential REOs. We call the REOs for which the exporting country has acquired relatively large RCA (say, of at least 0.7) actual REOs. A comparison of the actual and potential REOs according to various criteria, will in turn allow some conclusions on the immediate use the three countries investigated can possibly make of their potential REOs, thus providing evidence on whether a country is sufficiently tapping its existing export potentials in the world. The analysis will end with a comparison of the REOs of the three countries, according to the geographical position and the level of economic development of the import markets.

¹ The detailed analysis is carried out at HS 6 digits, after which we have grouped categories at 2-digit level.

Belgium is a high income OECD country that, as a small but rich economy, is very open to the international trade and investment flows of the rest of the world. It is at the crossroads of the major physical distribution channels (roads, railways, ports) in Western Europe. As founding member of the European Union and as host of the European Union institutions, Belgium is at the centre of the European single market. Thailand, on the other hand, is an Asian lower middle-income economy, whereas South Africa is an African upper middle-income country. However, Thailand is a fast-growing economy and often considered as a “next tier Newly Industrialising Economy” which is part of an economically dynamic region in the world – the backyard of Japan, South Korea and China – which has evolved following the so-called “flying geese” pattern of industrialisation. South Africa, on the other hand, is mostly described as a “dual society” with a rich upper class of people, which compare to the rich population strata in the high-income countries and also share important cultural characteristics with the “West”, and a vast number of poor and very poor with low-quality education levels and often divided along tribal lines. The poverty headcount ratio at the national poverty line (% of the population) in South Africa amounts at 22% (2008, but 38% in 2000), against 13.6% (1998, in the middle of the “Asian crisis”) in Thailand. Moreover, South Africa is located in a much less economically dynamic region of the world.

As we lack a standard or reference for the comparison of the product and country structure of the realistic export opportunities of exporting countries, or the use that is made of the opportunities, we are compelled to limit ourselves to the comparison of the DSM results for Belgium, South Africa and Thailand. In contrast to Chapter 7, where only South Africa’s export opportunities in the rest of the African continent are investigated, the comparison in the present chapter relates to the export opportunities of Belgium, Thailand and South Africa respectively, in the rest of the world.

As the selection of the REOs for Belgium, South Africa and Thailand proceeds in the same way, using the same macro-economic and international trade data, one would expect the REOs of the countries to be very similar. Yet, a comparison of the distribution of the REOs according to the relative market share of the exporting country and the import market characteristics will show remarkable differences. The reasons for these differences must evidently be found in the differences in the export market shares of the selected countries in the import markets.

However, as will be pointed out below, the product composition of the set of potential realistic export opportunities of the three exporting countries researched does not seem to show much difference. We, therefore, also look at the actual REOs. Moreover, a comparison of actual and potential REOs allows providing evidence on whether a country is sufficiently tapping its existing export potentials in the world.

6.2 Comparison of the REOs identified for Belgium, South Africa and Thailand

In this section we analyse the distribution of the potential REOs according to relative market share of Belgium, South Africa and Thailand respectively and market characteristics of the import markets involved in the REOs. We first consider the number of potential REOs detected, counting the product-country combinations involved, after which we analyse the distribution using the US\$ values involved.²

6.2.1 Comparison based on the distribution of the number of potential REOs according to relative export market position and import market characteristics

In Table 6.1a, 6.1b and 6.1c, the number of the potential REOs of Belgium, South Africa and Thailand, and their percentage distribution are depicted according to the relative market share of these countries³ in the respective import markets, as well as the import market characteristics of the individual REO.

Table 6.1a. Distribution of Belgium's potential realistic export opportunities according to relative market position and market characteristics.

	Market share of Belgium relatively small	Market share of Belgium intermediately small	Market share of Belgium intermediately large	Market share of Belgium relatively large	Total
Large product market	2,295 (3.756%)	1,377 (2.26%)	1,744 (2.86%)	1,716 (2.81%)	7,132 (11.68%)
Growing (long- and short-term) product market	27,226 (44.60%)	3,222 (5.28%)	3,114 (5.10%)	4,542 (7.44%)	38,104 (62.41%)
Large product market, short-term growth	1,266 (2.07%)	774 (1.27%)	1,053 (1.72%)	1,182 (1.94%)	4,275 (7.00%)
Large product market, long-term growth	1,062 (1.74%)	587 (0.96%)	759 (1.24%)	678 (1.11%)	3,086 (5.05%)

2 These values were calculated following the methodology outlined in Viviers *et al.* (2010) and Chapter 4 section 5.3. It consists at calculating per product group at HS 6-digit level the average value of imports of the exporting countries, which represent 80% of these imports.

3 For the cut-off values of the relative market share used to distinguish between market shares that are relatively small, intermediately small, intermediately high and relatively high, we refer to Cuyvers *et al.* (1995) and Cuyvers (1996, 2004), as outlined in Chapter 4, Table 4.6.

	Market share of Belgium relatively small	Market share of Belgium inter-mediatly small	Market share of Belgium inter-mediatly large	Market share of Belgium relatively large	Total
Large product market, short- and long-term growth	3,000 (4.91%)	1,604 (2.63%)	2,073 (3.40%)	1,777 (2.91%)	8,454 (13.85%)
Total	34,849 (57.08%)	7,564 (12.39%)	8,743 (14.32%)	9,895 (16.21%)	61,051 (100%)

Source: Authors' own calculations based on DSM results

Table 6.1b. Distribution of South Africa's potential realistic export opportunities according to relative market position and market characteristics.

	Market share of South Africa relatively small	Market share of South Africa inter-mediatly small	Market share of South Africa inter-mediatly large	Market share of South Africa relatively large	Total
Large product market	9,279 (11.88%)	1,272 (1.63%)	1,104 (1.41%)	569 (0.73%)	12,224 (15.65%)
Growing (long- and short-term) product market	44,037 (56.39%)	531 (0.68%)	442 (0.57%)	1,771 (2.27%)	46,781 (59.90%)
Large product market, short-term growth	4,558 (5.84%)	516 (0.66%)	455 (0.58%)	241 (0.31%)	5,770 (7.39%)
Large product market, long-term growth	3,066 (3.93%)	275 (0.35%)	262 (0.34%)	177 (0.23%)	3,780 (4.84%)
Large product/market short- and long-term growth	7,717 (9.88%)	723 (0.93%)	707 (0.91%)	396 (0.51%)	9,543 (12.22%)
Total	68,657 (87.91%)	3,317 (4.245%)	2,970 (3.80%)	3,154 (4.04%)	78,098 (100%)

Source: Authors' own calculations based on DSM results

Table 6.1c. Distribution of Thailand's potential realistic export opportunities according to relative market position and market characteristics.

	Market share of Thailand relatively small	Market share of Thailand inter-mediatly small	Market share of Thailand inter-mediatly large	Market share of Thailand relatively large	Total
Large product market	852 (3.94%)	361 (1.67%)	288 (1.33%)	121 (0.56%)	1,622 (7.51%)
Growing (long- and short-term) product market	12,094 (55.96%)	755 (3.49%)	584 (2.70%)	465 (2.15%)	13,898 (64.31%)
Large product market, short-term growth	705 (3.26%)	288 (1.33%)	199 (0.92%)	72 (0.33%)	1,264 (5.85%)
Large product market, long-term growth	645 (2.98%)	245 (1.13%)	169 (0.78%)	58 (0.27%)	1,117 (5.17%)
Large product market, short- and long-term growth	2,164 (10.01%)	760 (3.52%)	615 (2.85%)	172 (0.80%)	3,711 (17.17%)
Total	16,460 (76.16%)	2,409 (11.15%)	1,855 (8.58%)	888 (4.11%)	21,612 (100%)

Source: Authors' own calculations based on DSM results

From the tables above it appears that among the potential REOs of South Africa and Thailand, 88% and 76% respectively are product-country combinations with a relatively small market share. For Belgium this group of potential REOs represents 57% of all REOs. This percentage is around 90% for Thailand (93%) and Belgium (88%) when growing product-country combinations are considered, and for South Africa 84%. As such, according to the theoretical insights on the role of comparative advantage of nations which determines the specialisation of countries in the world market, such large shares would not come too much as a surprise.

The number of potential REOs with an intermediately large or even large market share for Belgium, South Africa and Thailand accounts for 30%, 8% and 12% of the total number of potential REOs of these countries respectively.

6.2.2 Comparison based on the distribution of the estimated values of the potential REOs according to relative export market position and import market characteristics

Tables 6.2a, 6.2b and 6.2c show the distribution of the estimated US\$ values of the potential REOs according to the relative market share of the three exporting countries considered and the import market characteristics.

Table 6.2a. Distribution of the estimated US\$ values of Belgium's potential realistic export opportunities according to relative market position and market characteristics.

	Market share of Belgium relatively small	Market share of Belgium inter-mediatly small	Market share of Belgium inter-mediatly large	Market share of Belgium relatively large	Total
Large product market	3.92%	6.30%	12.71%	7.12%	30.04%
Growing (long- and short-term) product market	6.71%	1.79%)	2.44%	3.55%)	14.50%
Large product market, short-term growth	3.31%	5.62%	4.64%	3.59%	17.17%
Large product market, long-term growth	1.12%	1.60%	2.75%	4.11%	9.57%
Large product market, short- and long-term growth	5.20%	4.18%	10.12%	9.21%	28.71%
Total	20.26%	19.49%	32.67%	27.58%	100%

Source: Authors' own calculations based on DSM results

Table 6.2b. Distribution of the estimated US\$ values of South Africa's potential realistic export opportunities according to relative market position and market characteristics.

	Market share of South Africa relatively small	Market share of South Africa inter-mediatly small	Market share of South Africa inter-mediatly large	Market share of South Africa relatively large	Total
Large product market	16.40%	7.13%	14.14%	3.08%	40.74%
Growing (long- and short-term) product market	7.95%	0.52%	0.49%	0.33%	9.29%
Large product market, short-term growth	6.78%	4.55%	3.27%	0.63%	15.23%

	Market share of South Africa relatively small	Market share of South Africa intermediately small	Market share of South Africa intermediately large	Market share of South Africa relatively large	Total
Large product market, long-term growth	3.98%	0.95%	2.86%	0.64%	8.44%
Large product market, short- and long-term growth	13.94%	4.80%	4.85%	2.71%	26.30%
Total	49.04%	17.95%	25.61%	7.40%	100%

Source: Authors' own calculations based on DSM results

Table 6.2c. Distribution of the estimated US\$ values of Thailand's potential realistic export opportunities according to relative market position and market characteristics.

	Market share of Thailand relatively small	Market share of Thailand intermediately small	Market share of Thailand intermediately large	Market share of Thailand relatively large	Total
Large product market	5.16%	10.70%	8.15%	2.91%	26.92%
Growing (long- and short-term) product market	10.03%	2.51%	2.25%	1.28%	16.07%
Large product market, short-term growth	4.63%	3.09%	1.53%	0.80%	10.05%
Large product market, long-term growth	2.78%	2.71%	2.70%	1.24%	9.43%
Large product market, short- and long-term growth	10.02%	8.13%	16.75%	2.63%	37.54%
Total	32.62%	27.14%	31.37%	8.87%	100%

Source: Authors' own calculations based on DSM results

From Tables 6.2a – c it can be concluded that many potential REOs have relatively low export values. South Africa's REOs with a relatively low South African market share, which represented 88% of all REOs, accounts for 49% of the total potential export value. In the

Thai case the 76% of all potential REOs represent 33% of the total potential export value. These percentages for Belgium are 57% and 20% respectively. In terms of values concerned the potential REOs with an intermediately large or even large market share for Belgium, South Africa and Thailand account for 60%, 33% and 40% of the total potential export value of these countries respectively.

6.2.3 Comparison based on the product distribution of the potential and actual REOs

The Tables 6.3a and 6.3b below allow some comparison between the DSM results based on the product distribution of the REOs. One should keep in mind, however, that the comparison with the South African results is somewhat hampered due to a different way of proxying the impact of trade barriers in Filter 3, which seems to have increased both the number of the South African REOs and their value. In spite of this, we assume that percentage distribution of the number of REOs and their value allows comparison of the Belgian and Thai REOs with the South African REOs.

Table 6.3a. Distribution of the potential realistic export opportunities of Belgium, South Africa and Thailand based on product (HS 2 digit).

HS 2 digit	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
01 – 05 Animal and animal products	2.57%	2.58%	2.52%	1.36%	1.13%	0.99%
06 – 15 Vegetable products	4.89%	4.90%	4.78%	2.24%	2.17%	2.12%
16 – 24 Foodstuffs	4.16%	3.82%	4.15%	3.02%	1.84%	2.33%
25 – 27 Mineral products	1.36%	2.08%	1.30%	6.89%	15.48%	6.92%
28 – 38 Chemicals and allied industries	13.56%	13.30%	11.56%	13.02%	8.77%	10.40%
39 – 40 Plastic/Rubbers	5.85%	4.83%	5.77%	4.26%	2.90%	2.82%
41 – 43 Raw hides, skins, leather, and furs	1.29%	1.40%	1.42%	0.88%	0.77%	1.04%
44 – 49 Wood and wood products	4.65%	5.06%	4.57%	2.64%	2.43%	2.26%
50 – 63 Textiles	14.94%	15.38%	16.06%	4.03%	3.76%	4.12%
64 – 71 Stone/Glass	4.86%	5.19%	5.19%	4.47%	5.25%	4.77%
72 – 83 Metals	11.22%	12.45%	11.00%	8.88%	8.52%	7.82%

HS 2 digit	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
86 – 89 Transportation	2.72%	2.59%	2.68%	12.97%	8.55%	13.37%
90 – 97 Miscellaneous	9.27%	8.27%	9.31%	11.55%	10.54%	13.39%
Grand total	100%	100%	100%	100%	100%	100%

The percentage distributions of the potential REOs of the three countries, according to the HS 2-digit product categories, are very similar. However, the South African share of mineral products in the total value of the REOs is much higher than in Belgium and Thailand, and the corresponding South African share of chemicals and allied industries and transportation are somewhat lower. This similarity should not come as a surprise, as in the filtering process that leads to the REOs, no account is taken of the comparative advantages of the respective countries.

Table 6.3b below shows the distribution of the REOs of the three countries when considering only these for which the respective countries have a $RCA \geq 0.7$, which we call “actual realistic export opportunities”.

Table 6.3b. Distribution of the actual realistic export opportunities of Belgium, South Africa and Thailand based on product (HS 2 digit).

HS 2 digit	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
01 – 05 Animal and animal products	2.53%	3.00%	2.36%	1.64%	1.52%	0.95%
06 – 15 Vegetable products	4.42%	7.05%	3.51%	2.19%	2.57%	1.07%
16 – 24 Foodstuffs	5.41%	6.13%	5.37%	3.99%	3.91%	2.41%
25 – 27 Mineral products	1.70%	3.90%	0.91%	6.17%	17.42%	7.46%
28 – 38 Chemicals and allied industries	19.69%	16.95%	6.56%	22.25%	6.71%	2.58%
39 – 40 Plastic/Rubbers	8.68%	4.26%	9.12%	7.47%	2.46%	5.33%
41 – 43 Raw hides, skins, leather, and furs	0.66%	1.59%	1.45%	0.78%	0.61%	0.85%
44 – 49 Wood and wood products	5.34%	4.41%	3.82%	3.56%	2.65%	1.69%

HS 2 digit	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
64 – 71 Stone/Glass	4.79%	5.43%	6.24%	6.05%	12.57%	8.67%
72 – 83 Metals	11.72%	19.21%	11.17%	10.63%	20.97%	7.20%
84 – 85 Machinery/ Electrical	12.55%	14.04%	19.78%	10.64%	11.77%	34.85%
86 – 89 Transportation	2.89%	2.91%	2.72%	14.37%	12.85%	16.61%
90 – 97 Miscellaneous	6.82%	4.34%	7.44%	5.47%	2.88%	5.35%
Grand total	100%	100%	100%	100%	100%	100%

When only considering the REOs for which the respective countries show a sufficient comparative advantage ($RCA \geq 0.7$), the distributions are much different. Belgium's percentage share of actual REOs in product category chemicals and allied industries (22.25%) is higher as compared to that of South Africa (6.71%) and Thailand (2.58%). South Africa is leading in metals (20.97% of its actual REOs) and minerals (17.42%). Thailand's share of machinery and transportation in its actual REOs are highest, representing 34.85% and 16.61%.

Also the countries' distributions of the values associated with the actual REOs show marked differences, actually making the differences in the distribution of the actual REOs more outspoken for a number of product categories, with textile products and transport equipment being extreme cases. It is also found, for instance that product category machinery and electrical equipment now represents 34.85% of the total value of Thailand's actual REOs. It would be interesting to investigate whether these REOs are more in import markets where Thailand's market share is small or rather large, but such a more detailed analysis is beyond the scope of the present study.

In terms of the values associated with the actual REOs, mineral products and metals represent for South Africa 17.42% and 20.97% respectively, against only 3.90% and 19.21% in numbers.

6.2.4 Comparison of actual and potential REOs

A comparison of the actual and potential REOs provides some interesting insights in the degree a country is adapted to the export opportunities in the world, taking into account its present comparative advantage.

Table 6.4. Actual as compared to potential realistic export opportunities of Belgium, South Africa and Thailand based on product (HS 2 digit).

HS 2 digit	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
01 – 05 Animal and animal products	48.37%	29.67%	36.61%	61.56%	24.93%	32.84%
06 – 15 Vegetable products	44.37%	36.63%	28.69%	49.89%	22.04%	17.29%
16 – 24 Foodstuffs	63.81%	40.93%	50.54%	67.20%	39.36%	35.19%
28 – 38 Chemicals and allied industries	71.26%	32.46%	22.20%	86.98%	14.22%	8.46%
39 – 40 Plastic/Rubbers	72.80%	22.47%	61.74%	89.36%	15.77%	64.54%
41 – 43 Raw hides, skins, leather, and furs	25.19%	28.92%	39.97%	45.09%	14.70%	27.94%
44 – 49 Wood and wood products	56.37%	22.19%	32.71%	68.70%	20.23%	25.48%
64 – 71 Stone/Glass	48.40%	26.67%	47.03%	68.85%	44.50%	62.05%
72 – 83 Metals	51.26%	39.32%	39.73%	60.92%	45.75%	31.41%
84 – 85 Machinery/ Electrical	33.05%	19.70%	39.28%	22.78%	7.85%	42.96%
86 – 89 Transportation	52.13%	28.61%	39.61%	56.39%	27.95%	42.37%
90 – 97 Miscellaneous	36.08%	13.37%	31.27%	24.10%	5.07%	13.62%
Grand total	49.09%	25.48%	39.11%	50.91%	18.59%	34.10%

From Table 6.4 it appears that on average Belgium is best adapted to its potential export opportunities in the world market, with half of these showing comparative advantages. Belgium is followed by Thailand with a ratio of actual to potential REOs of 39.11% and 34.10% respectively according to number and values of REOs. South Africa's potential REOs are only covered for 25.48% and 18.95%, which seems dismally low.

There are, however, striking differences according to the product categories at HS 2-digit level. In terms of values behind the potential REOs, Belgium's potentials in plastics/rubbers (HS 39-40) and chemical products (HS 28-38) can be almost completely materialised (89.36% and 86.98% respectively), followed by stone/glass (68.85%), wood and wood products (68.70%) and foodstuffs (67.20%). Considering South Africa's potentials, it has the highest ratio in metals (45.75%) and stone/glass (44.50%), but it can be assumed that

it will face tough competition from many other countries, as also Belgium and Thailand have a relatively high ratio for this category (60.92% and 31.41% respectively in metals and 68.85% and 62.05% respectively in stone/glass). Thailand's potentials, in terms of export values considered, can mostly be materialised in plastic/rubber (64.54%) and stone/glass (62.05%), where it seems that Belgium's possibilities to do likewise are highest of the three countries (89.36% and 68.85% respectively).

It is also interesting to look at textile products, for which Belgium seems to be adapted most of the three countries to cater to the export opportunities in the world with a ratio of actual to potential REOs in value terms of 60.57%. It is followed by Thailand in this product group with a ratio of 41.11%. South Africa's textile products for which there is comparative advantage hardly correspond to the REOs in the world (5.59%).

6.2.5 Comparison based on the level of development of the importing countries and on the geographical distribution of the REOs

It is also possible to compare the DSM results according to their geographical distribution. Based on international trade theory it can be expected that the REOs are differently distributed as a result of distance between exporting and importing country and as a result of their level of economic development.

6.2.5.1 Comparison based on the level of development of the importing countries for potential and actual REOs of Belgium, South Africa and Thailand

Table 6.5a and 6.5b below provide the distribution of actual and potential REOs of the three exporting countries according to the level of development of the importing countries. Following the World Bank Atlas definition four groups of importing countries are distinguished according to level of development, using their 2009 GNI per capita, as follows:

- (i) High-income economies with a GNI per capita of \$12,196 or more,
- (ii) Upper middle-income economies with a GNI per capita of \$3,946 – \$12,195
- (iii) Lower middle-income economies with a GNI per capita of \$996 – \$3,945
- (iv) Low-income economies with a GNI per capita of \$995 or less.

Table 6.5a. Potential REOs of Belgium, South Africa and Thailand according to the level of development of the importing countries.

	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
High-income economies	67.87%	64.22%	70.26%	85.05%	76.99%	85.02%
Upper middle-income economies	21.34%	18.43%	19.47%	7.58%	5.18%	7.19%
Lower middle-income economies	9.85%	14.41%	9.34%	7.05%	17.62%	7.67%
Low-income economies	0.94%	2.93%	0.93%	0.33%	0.21%	0.12%
Total	100%	100%	100%	100%	100%	100%

Again, as far as the distribution of potential REOs of Belgium, South Africa and Thailand is concerned, these are very similar, with the exception of the high share of the lower middle-income economies for South Africa, and its corresponding lower share of the high-income and upper middle-income economies.

Table 6.5b. Actual REOs of Belgium, South Africa and Thailand according to the level of development of the importing countries.

	Number of REOs			Value of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
High-income economies	69.12%	66.71%	71.75%	86.65%	77.93%	84.43%
Upper middle-income economies	20.79%	16.72%	8.19%	8.46%	5.93%	5.65%
Lower middle-income economies	9.22%	13.60%	1.05%	4.35%	15.63%	0.23%
Low-income economies	0.88%	2.98%	19.02%	0.54%	0.51%	9.69%
Total	100%	100%	100%	100%	100%	100%

Also the actual REOs of Belgium and Thailand are mostly distributed similarly according to the level of development of the importing economies, with an exception for the higher share of the low-income economies for Thailand (particularly in number terms), and a corresponding lower share of the middle-income economies. The actual REOs of South Africa show relatively higher concentration in the lower middle-income economies, than these of Belgium and Thailand, but South Africa's share of the low-income economies, in terms of potential exporting value, is almost the same as that of Belgium. Taking into account that in the near future the most dynamic markets can be assumed to be in the high

income and upper middle income economies, and probably not the low income economies, this implies that, taking into account the comparative advantage of the three exporting countries, Belgium is best positioned, followed by Thailand, with South Africa coming third.

6.2.5.2 Comparison based on the geographical distribution of potential and actual REOs of Belgium, South Africa and Thailand separately

Tables 6.6a, 6.6b and 6.6c show the potential and actual REOs of Belgium, South Africa and Thailand, grouped according to the region of the world where these REOs can be found.

Table 6.6a. Belgium's potential and actual REOs according to region.

	Potential REOs				Actual REOs			
	Sum of potential export value		Sum of number of products selected in this country		Sum of potential export value		Sum of number of products selected in this country	
	(US\$ thousands)	%	Nrs	%	(US\$ thousands)	%	Nrs	%
Africa	14,298,790	1.41%	3000	4.91%	7,490,151	1.45%	1455	4.86%
ASEAN	23,155,072	2.28%	1545	2.53%	5,531,737	1.07%	723	2.41%
CEEC*	77,168,688	7.59%	17190	28.16%	41,275,755	7.97%	8609	28.73%
Central America and Caribbean	8,353,030	0.82%	842	1.38%	5,562,244	1.07%	425	1.42%
Central and East Asia	80,718,518	7.93%	2160	3.54%	26,246,841	5.07%	908	3.03%
EU 15	573,125,025	56.34%	22204	36.37%	319,431,869	61.68%	11053	36.88%
Middle East	25,178,862	2.48%	3531	5.78%	12,786,885	2.47%	1699	5.67%
North America	159,253,602	15.65%	2018	3.31%	65,596,644	12.67%	763	2.55%
North Europe (non-EU)	5,884,249	0.58%	1750	2.87%	3,607,742	0.70%	907	3.03%
Oceania	9,299,150	0.91%	1028	1.68%	5,321,317	1.03%	544	1.82%
South America	11,802,938	1.16%	2707	4.43%	7,379,979	1.42%	1338	4.46%
South Asia	6,611,225	0.65%	983	1.61%	2,735,152	0.53%	412	1.37%
South Europe (non-EU)	22,464,707	2.21%	2093	3.43%	14,951,743	2.89%	1132	3.78%
Grand total	1,017,313,856	100%	61051	100%	517,918,059	100%	29968	100%

* Central and East European countries

From Table 6.6a it appears that the distribution of the actual and potential REOs of Belgium in terms of values and numbers involved respectively is very similar, although the distribution according to values as compared to that based on numbers is different (e.g. North America accounts for 12 to 16% of the total potential when values are considered, but only 2 to 3% based on numbers). As we will see immediately, the same observation holds for South Africa and Thailand, but the percentages evidently differ.

It is interesting to look into the shares of Asia and Latin America in South Africa's REOs according to Table 6.6b. In a previous study (Pearson *et al.*, 2010), it was found that the number of potential REOs in Brazil was 51, in China 259 and in India 198. Although the level of detail of the product-country combinations is far from the same, it is the proportions that interest us here, which are: for each REO in Brazil, 5 were detected in China and 4 in India. On the basis of the present calculations for South Africa, 1,153 potential REOs were detected in Brazil, against 2,321 in China and 1,475 in India. The reason for the divergence with the previous results is due to the different levels of aggregation and product classification (SITC at 4 digits in Pearson *et al.*, 2010, against HS 6-digit level in this study) and the impact of trade barriers and market concentration in the import markets, which were not sufficiently taken into account in Pearson *et al.* (2010).

Table 6.6b. South Africa's potential and actual REOs according to region.

	Potential REOs				Actual REOs			
	Sum of potential export value		Sum of number of products selected in this country		Sum of potential export value		Sum of number of products selected in this country	
	(US\$ thousands)	%	Nrs	%	(US\$ thousands)	%	Nrs	%
Africa	7,438,520	0.49%	3,553	4.55%	2,578,317	0.92%	948	4.76%
ASEAN	87,440,482	5.80%	5,621	7.20%	14,023,239	5.00%	1,501	7.54%
CEEC *	59,925,151	3.97%	18,676	23.91%	13,463,243	4.80%	4,561	22.92%
Central America and Caribbean	1,436,631	0.10%	814	1.04%	619,304	0.22%	234	1.18%
Central and East Asia	348,629,836	23.12%	5,335	6.83%	54,868,642	19.58%	1,216	6.11%
EU 15	505,836,786	33.55%	23,884	30.58%	89,846,273	32.06%	6,232	31.32%
Middle East	37,689,661	2.50%	5,485	7.02%	11,947,288	4.26%	1,404	7.06%
North America	366,710,535	24.32%	4,039	5.17%	67,378,925	24.04%	919	4.62%
South America	17,892,536	1.19%	2,825	3.62%	4,069,061	1.45%	657	3.30%

	Potential REOs				Actual REOs			
	Sum of potential export value		Sum of number of products selected in this country		Sum of potential export value		Sum of number of products selected in this country	
	(US\$ thousands)	%	Nrs	%	(US\$ thousands)	%	Nrs	%
South Asia	36,063,108	2.39%	2,093	2.68%	10,104,680	3.61%	507	2.55%
South Europe (non-EU)	17,580,111	1.17%	2,078	2.66%	4,594,902	1.64%	593	2.98%
Grand total	1,507,828,144	100%	78,098	100%	280,283,304	100%	19,897	100%

* Central and East European countries

Table 6.6c. Thailand's potential and actual REOs according to region.

	Potential REOs				Actual REOs			
	Sum of potential export value		Sum of number of products selected in this country		Sum of potential export value		Sum of number of products selected in this country	
	(US\$ thousands)	%	Nrs	%	(US\$ thousands)	%	Nrs	%
Africa	6,738,238	0.79%	2,384	4.31%	3,200,778	1.11%	976	4.52%
ASEAN	18,902,762	2.23%	1,029	1.86%	10,992,617	3.80%	305	1.41%
CEEC *	61,837,697	7.28%	14,765	26.72%	29,092,766	10.05%	6,178	28.59%
Central America and Caribbean	8,139,306	0.96%	741	1.34%	5,388,721	1.86%	291	1.35%
Central and East Asia	77,666,045	9.15%	2,008	3.63%	21,619,978	7.47%	624	2.89%
EU 15	451,728,306	53.21%	21,586	39.06%	144,969,830	50.07%	8,262	38.23%
Middle East	20,196,643	2.38%	3,216	5.82%	8,975,706	3.10%	1,279	5.92%
North America	156,857,500	18.48%	1,976	3.58%	46,862,008	16.19%	527	2.44%
South America	9,079,254	1.07%	2,370	4.29%	4,304,301	1.49%	892	4.13%
South Asia	6,274,544	0.74%	900	1.63%	2,268,155	0.78%	278	1.29%
South Europe (non-EU)	18,575,561	2.19%	1,820	3.29%	5,900,696	2.04%	836	3.87%
Grand total	848,937,247	100%	55,259	100%	289,518,044	100%	21,612	100%

* Central and East European countries

In the Thailand case we want to draw attention to the small share of ASEAN in the potential REOs (see Table 6.6c). In 1997, ASEAN accounted for 343 of Thailand's REOs (15%), as compared to 199 REOs in the USA (9%), 179 in Japan (8%), 144 in China (6%) and 114 in India (5%) (Cuyvers, 2004). Using 2007 data and a more disaggregated HS product classification, the share of ASEAN in Thailand's REOs is merely 1.86% (in potential value terms only 2.23%). The share of the USA is 3% (17% in value terms), Japan's share 1% (2.26% in terms of value), China's 1.85% (6.02% in terms of value), India's 1.37% (0.73% in terms of value). This draws a rather gloomy picture of ASEAN as an export driven growth engine for the member countries, in particular for Thailand. In contrast, the EU-15 represents 39.06% of all Thailand's REOs (even 53.21% in terms of value), against some 22% in 1997. These differences with previous results have to be analysed further in detail in order to find out whether they are robust over time and when using, as previously, SITC international trade data.⁴

Two more comparisons are appropriate. In section 6.2.6, we first compare the distributions between Belgium, South Africa and Thailand, after which, in section 6.2.7, the respective ratios of actual to potential REOs for the three countries in the respective regions are looked at in some detail.

6.2.6 Comparison based on the geographical distribution of potential and actual REOs between Belgium, South Africa and Thailand

Referring to the percentages in Table 6.6a – 6.6c, it can be concluded that the broad geographical distribution of the potential REOs of Belgium, South Africa and Thailand is very similar. When looking at the number of REOs, the EU-15 and the Central and Eastern European Countries have the largest share (although somewhat smaller for South Africa's REOs). At first sight this should not be too surprising as the same product providing a REO in e.g. France, the United Kingdom and Spain is counted three times, i.e. not as one single REO in the EU-15. However, when we look at the geographical distribution of the REOs based on potential export value, the share of EU-15 is even larger (but almost the same as far as South Africa is concerned), while North America and Central and East Asia are now ranking second and third. When considering the potential export value of South Africa's REOs the EU-15 represents 33.55% of South Africa's REOs, against 24.32% in North America and 23.12% in Central and East Asia. That EU-15 makes up 56.34% of the potential value of Belgium's REOs, against 15.65% in North America and 7.93% in Central and East Asia, is not surprising at all, considering EU-15 as Belgium's "hinterland" and taking into account that Belgium is a member country of the European single market. As mentioned above, it is more surprising

4 The geographical distributions might have been biased due to the importance of intra-EU trade. Therefore, the calculations were done by only focusing on the potential export values in EU-15 as a whole, instead of adding up the potential export values of the EU-15, which evidently include these of the other EU-15 countries into each other's market.

to see that EU-15 represents 53.21% of the potential export value of Thailand's REOs, and Central and East Asia only 9.15%.

When considering the sheer numbers of actual REOs (potential REOs for which the respective exporting countries have a $RCA \geq 0.7$), the geographical distributions of Belgium, South Africa and Thailand are remarkably similar, with the EU-15 providing the highest number of potential REOs (36-39% for Belgium and Thailand, but only 33.55% for South Africa), followed second by the Central and Eastern European countries (about 26 – 28% for Belgium and Thailand, and 23% for South Africa).

However, when the potential export values are considered, the distributions are much less similar. The share of EU-15 is still highest, but differs significantly between Belgium (61.68% of the potential export value of Belgium's actual REOs), South Africa (32.06%) and Thailand (50.07%). The region of North America comes second, Central and East Asia comes third, but surprisingly for Thailand the share of the actual REOs in Central and East Asia in value terms only represents 7.5%.

6.2.7 Comparison of actual and potential REOs according to geographical region

A comparison of the ratios of actual and potential REOs for an exporting country according to the region of the world where these REOs occur, also allows some tentative conclusions about the possibilities to cater to the world taking into account the present degree of specialisation ($RCA \geq 0.7$). Table 6.7 below shows the ratios of actual to potential REOs according to the region. The ratios can be interpreted as showing the overall potential degree of utilisation of the REOs in a region by the exporting country, or the degree of immediate utilisation of the export potentials in a region of the world. However, as we are not investigating the one-by-one correspondence at product level between actual and potential REOs, the comparison should not be used to draw other conclusions than as to the degree a potential existing in a region can possibly be tapped. A comparison with e.g. the real export values at product level from the exporting country into the various regions would shed more light on the use that is made of the almost immediately existing export potentials. Such a comparison is, however, a topic for a separate study and, therefore, beyond the scope of the present study.

In terms of potential export values, Belgium has the highest potential degrees of utilisation (except for, based on number of REOs, Thailand in ASEAN, which is understandable given the geographical and cultural proximity), followed by Thailand, with South Africa coming last in the ranking. This seems to reflect the degree of adaptation of the exporting countries to their potential export opportunities in the world market. The picture that emerges is a reflection of the basic reality, which we already came across while analysing similar ratios

according to product composition of the REOs. When looking at the potential degrees of utilisation-based on the number of actual and potential REOs, the same can be concluded.

The degree of immediate utilisation of the export potentials of Belgium is highest based on number of REOs in Central America and the Caribbean, where it reaches 66.59%. This ratio is 66.56% in South Europe and around 53-56% in the Central and Eastern European countries and in the EU-15. The lowest ratio for Belgium is found in ASEAN. Thailand's degree of immediate utilisation of its export potentials is also highest in Central America and the Caribbean. Not surprisingly, the same ratio amounts at some 58.15% in ASEAN, but it appears that the potentials in Europe can only to a limited extend be tapped, which is even more the case for Central and East Asia. South Africa shows little capacity to immediately use the export potentials.

Table 6.7. Potential degree of utilisation of REOs according to region.

	Based on potential export value of REOs			Based on number of REOs		
	Belgium	South Africa	Thailand	Belgium	South Africa	Thailand
Africa	48.50%	26.68%	40.94%	52.38%	34.66%	47.50%
ASEAN	46.80%	26.70%	29.64%	23.89%	16.04%	58.15%
CEEC *	50.08%	24.42%	41.84%	53.49%	22.47%	47.05%
Central and East Asia	42.04%	22.79%	31.08%	32.52%	15.74%	27.84%
EU 15	49.78%	26.09%	38.27%	55.74%	17.76%	32.09%
Middle East	48.12%	25.60%	39.77%	50.78%	31.70%	44.44%
North America	37.81%	22.75%	26.67%	41.19%	18.37%	29.88%
North Europe (non-EU)	51.83%	29.26%	47.12%	61.31%	29.51%	43.89%
Oceania	52.92%	31.61%	47.45%	57.22%	33.06%	47.10%
South America	49.43%	23.26%	37.64%	62.53%	22.74%	47.41%
South Asia	41.91%	24.22%	30.89%	41.37%	28.02%	36.15%
South Europe (non-EU)	54.09%	28.54%	45.93%	66.56%	26.14%	31.77%
Grand total	49.09%	25.48%	39.11%	50.91%	18.59%	34.10%

* Central and East European countries

In value terms, a similar picture emerges for Belgium, with Central America and the Caribbean, the CEEC and EU-15 showing an immediate utilisation ratio of around 50%. For Thailand this ratio amounts at about 39 to 41% for the REOs potential export value in

the CEEC, Africa and Central America and the Caribbean, but highest in Oceania and the North-European market. As for South Africa, the ratios are remarkably low, even in the African market.

6.3 Conclusions

The present chapter compares the realistic export opportunities (REOs) of Belgium, South Africa and Thailand in the world market at large. These REOs were identified using a decision support model for export promotion purposes. We analyse the distribution of potential REOs with actual REOs. Potential REOs are REOs, which disregard the comparative advantage in exporting the goods at issue by the exporting country. Actual REOs are the REOs for which the revealed comparative advantage index of the exporting country is at least 0.7.

We have shown that these concepts and a comparison of the distributions of the actual and potential REOs between the three exporting countries according to numbers involved or underlying export values provide a powerful tool to assess the capacity of an exporting country to tap into the export opportunities in the world. A comparison of the ratios of actual and potential REOs for an exporting country according to the region of the world where these REOs occur, also allows some tentative conclusions about the possibilities to cater to the world market's needs, taking into account the exporting country's present degree of specialisation. In fact, such ratios can be interpreted as giving the overall potential degree of utilisation of the REOs in a region by the exporting country.

We have illustrated the use that can be made by such comparisons for Belgium, South Africa and Thailand. No doubt, the concepts used and the comparison made allows a more detailed analysis about which product groups and which countries and regions in the world need improvement in the exports of a country. This in turn is an important input in discussions about a country's export strategy.

Our comparison revealed that in terms of export values concerned, the potential REOs with an intermediately large or even large market share for Belgium, South Africa and Thailand account for 60%, 33% and 40% of their total potential export value. We also found that, on average, Belgium is most adapted to its potential export opportunities in the world market, with half of these showing comparative advantages. Belgium is followed by Thailand with a ratio of actual to potential REOs of 39.11% and 34.10% respectively according to number and values of REOs. South Africa's potential REOs are only covered for 25.48% and 18.95%, which seems dismally low.

We also considered the level of economic development of the import markets in the world. When it is assumed that in the near future the most dynamic markets are most likely to be found in the high-income and upper middle-income economies, and probably not the low-income economies, our results imply that, taking into account the comparative advantage of the three exporting countries, Belgium is best positioned in these countries, followed by Thailand, with South Africa coming third.

On the other hand, some results were obtained that beg for further research and analysis. In the Thailand case, for instance we found that ASEAN only has a small share in Thailand's potential REOs, thus, unexpectedly, downgrading ASEAN as an export driven growth engine for the member countries, in particular for Thailand. In contrast, for the three exporting countries considered, the EU-15 seems to show high export potential. The region of North America comes second: 12.67% of the potential value of Belgium's, 24.04% of South Africa's, and 16.19% of Thailand's actual REOs. Central and East Asia comes third: 5.07% of the potential value of Belgium's actual REOs is located in that region, and even 19.58% of South Africa's, but surprisingly hardly 8% of these of Thailand.

Belgium has the highest potential degrees of utilisation of potential export values (except for Thailand in ASEAN, which is understandable given the geographical and cultural proximity), followed by Thailand, with South Africa coming last in the ranking. This result seems to reflect the degree of adaptation of the three exporting countries to their potential export opportunities in the world market.

It would be interesting to extend the analysis to actual and potential production networks by linking e.g., Belgium's REOs in Thailand or South Africa, which can be considered as relating to intermediate products, to Thailand's or South Africa's REOs of final products that are produced using the said intermediate products. In this way, interdependencies between exporting/importing countries could be assessed as factors, which reinforce the potentials of the REOs and could become important input in the discussions on the relationship between the characteristics of the REOs and appropriate public export promotion strategies at product level. Moreover, such analysis could be linked to foreign direct investment potentials in exporting/importing countries and thus become an element of public investment promotion as well. This is evidently beyond the scope of the present chapter. The issue of how to derive appropriate export promotion strategies for the REOs identified is covered by Chapter 9.

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