An Examination of Nepal's Export Choice based on Revealed Comparative Advantage

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Abstract

This paper examines the comparative advantage of a selection of 27 Nepal's export products, of which 16 are extracted from the Nepal Trade Integration Strategy (NTIS 2010) list of potential priority exports. The primary purpose of this study is to investigate if these priority export products are in alignment with the concept of comparative advantage. Balassa's revealed comparative advantage (RCA) index is used as the methodology for analysis while the data used spans from 2000 to 2011. Empirical results show that out of the 16 NTIS 2010 potential priority exports, only 10 are products which Nepal has comparative advantage in producing, major ones being pashmina, wool and agro food products. The findings also reveal that there are at least three other products- carpets, textile and juice that Nepal poses high RCA indices but are not included under NTIS 2010 priority list.

Key Words: Nepal, Revealed Comparative Advantage (RCA), Export, Nepal Trade Integration Strategy (NTIS)

JEL Classification: F10, F13, F14, O24

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I.   INTRODUCTION

Gains from trade can be attributed to the comparative advantage that countries possess in the production and the specialization of certain goods and services. The theory of comparative advantage, developed in 1817 by David Ricardo, explains the merits of international trade. The pattern of trade can be explained by the relative supplies of capital, labor and land and their uses in the production of different goods and services (Krugman, Obstfeld and Melitz 2010). Identifying comparative advantage for countries has been a tricky undertaking. Balassa (1965) first tried to solve the problem of reallocating resources on the basis of comparative advantage. The idea was, looking at an individual country's relative export performance of particular products vis-à-vis rest of the world would 'reveal' its comparative advantage on those products. The calculation and comparison of a country's revealed comparative advantage (RCA) index provides a meaningful basis to examine a country's exporting strategy, including reallocating capital and labor resource and readjusting trade agreement with others.

Nepal's trade liberalization efforts gained pace after the political change of 1990 which marked the beginning of constitutional democracy in Nepal. Indeed, Nepal, which reduced tariff rates from an average of 40% in 1990 to about 9% in 2005, is the most liberalized country in South Asia[1]. Also, there is virtually no non-tariff barriers and quota restrictions (Choe and Pradhan, 2010). In addition, as a member of the South Asian Association for Regional Cooperation (SAARC), Nepal joined the South Asia Free Trade Organization (SAFTA) whereby member countries were required to reduce tariff rates collectively to a certain percentage. Although the efforts by SAFTA to reduce tariff rates were not much of a success, SAFTA is instrumental in furthering the liberalization of Nepal's trade which led to the expansion of Nepal's trading activities. Traditionally, major exports of Nepal have been woolen carpets, handicrafts (metal and wooden) and other natural resources. However, the liberalization of 1990s opened up a wider array of export products especially in the textile industry, which became the prime export of Nepal overtaking woolen carpets.

There have been relatively few studies which look into the comparative advantage of Nepal's exports, of which some were focused on strengthening the export situation of the country. One such study was the Nepal Trade Integration Strategy 2010 (NTIS 2010) initiated by the government of Nepal along with other funding agencies. This study identified and recommended 16 priority export products in order for Nepal to create an inclusive export base. However, there have been some debates on whether the recommendations are sound and based on the concept of comparative advantage.

The purpose of this paper is to analyze the export potential of 16 priority export products identified by NTIS 2010 and investigate if they are products which can be exported with comparative advantage. Apart from NTIS 2010's identified products, we then extend the RCA analysis to another additional 11 exporting commodities which Nepal has been

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[1]   South Asia comprises of Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka (World Bank classification).

traditionally strong at exporting. RCA index is calculated using data acquired from United Nation's Comtrade database for the period of 2000 to 2011.

The rest of the paper proceeds as follows. Section 2 provides an overview of Nepal's export with its major trading partners; section 3 explores the existing literature on the subject topic; section 4 provides a brief summary of the NTIS 2010 report with particular focus on the priority export products; section 5 focuses on data, methodology as well as the presentation and discussion on the findings. Section 6 concludes with recommendations for Nepal's export products.

II. BRIEF OVERVIEW OF NEPAL'S EXPORT WITH MAJOR TRADING PARTNERS

Historically, Nepal's trade sector is weak with a persistent trade deficit and limited trading partners. The Federation of Nepalese Chambers of Commerce and Industry (FNCCI, 2011) listed the top export partners of Nepal (Table 1) as India, the United States of America (USA), Bangladesh, Germany, UK, France, Turkey, Canada, Italy and China. Of these countries, India has been Nepal's largest trading partner since 1950. Six out of Nepal's top ten partners are developed countries which might explain the huge trade deficit which Nepal faces. The theory of comparative advantage states that international trade can make the participating countries better off but this can happen only if countries specialize in producing goods that it has comparative advantage.

Table 1: Exports of Nepal to top 10 trading partners (NRs million)

Country	2006/07	2007/08	2008/09	2009/10	2010/11
India	41,728.8	38,555.7	43,574.5	39,902.8	42,868.1
USA	5,571.3	4,598.9	4,878.6	3,867.2	4,392.6
Bangladesh	521.5	4,664.4	4,710.4	3,373.7	3,471.9
Germany	2,573.7	2,332.1	2,785.0	2,391.0	2,769.0
UK	998.7	1,066.3	1,429.7	1,228.2	1,389.5
France	904.0	1,001.2	1,144.7	1,152.9	1,206.2
Turkey	174.8	107.7	472.5	277.0	865.7
Canada	593.7	713.7	795.4	768.1	820.4
Italy	684.3	583.8	851.5	716.2	758.3
China	378.0	736.4	1,847.9	1,008.7	746.0

Source: FNCCI (2011)

In terms of product base, Nepal's exports with developing and developed countries are quite similar with a high concentration on handicraft or agro-food commodities. This reliance on handicraft or agro-food exports makes Nepal's trade sector volatile and creates a need for product diversification. As such, NTIS 2010 identified 16 priority export products so as to have a more inclusive export base.

Table 2 shows the growth rates of exports of Nepal's top 10 trading partners from 2007/08 to 2010/11. It is noteworthy that all 10 countries experienced a fall in exports

with Nepal in 2009/10. This downward trend is likely due to the lagged effect of a reduction in the demand for Nepal's exports resulting from the global economic recession which occurred in 2008. If we exclude the data for 2009/10, with the exception of China, all of Nepal's top 10 trading partners experienced an increase in exports from 2007/08 to 2010/11.

Table 2: Growth rates of Nepal's exports (%)

Country	2007/08	2008/09	2009/10	2010/11
India	-7.6	13.0	-8.4	7.4
USA	-17.5	6.1	-20.7	13.6
Bangladesh	794.4	1.0	-28.4	2.9
Germany	-9.4	19.4	-14.1	15.8
UK	6.8	34.1	-14.1	13.1
France	10.8	14.3	0.7	4.6
Turkey	-38.4	338.6	-41.4	212.6
Canada	20.2	11.4	-3.4	6.8
Italy	-14.7	45.9	-15.9	5.9
China	94.8	150.9	-45.4	-26.0

Source: FNCCI (2011)

Of particular mention is the growth of Nepal's exports to India, her largest trading partner. If we exclude the year 2009/10 which as aforementioned was an anomaly year, India's trade with Nepal increased steadily whereby Nepal's exports growth with India increased from -7.6% in 2007/08 to 13% in 2008/09 and then to 7.4% in 2010/11. In addition, it is interesting to note that China was the only country with which Nepal registered a negative export growth in 2009- 2011.This decline is likely due to Nepal's ban on the export of sandalwood trade from Nepal to China in 2009.

III.   LITERATURE REVIEW

3.1   RCA related Studies

Much research on RCA has been conducted since Balassa's groundbreaking paper of 1965 that first introduced this economic concept. Balassa's introduction of the RCA index enables the comparison of a country's relative proportion of a certain product in the world market and the indication of changes in relative proportions over time to be made. This allows researchers to determine where the comparative advantage of countries lies in multi-lateral trade. Balassa and Noland (1989) further examined USA and Japan's indices of RCA derived for 57 primary and 167 manufactured product categories and aggregated for twenty commodity goods during the period 1967 - 1983. While Japan became more specialized in human-capital intensive products at the expense of unskilled labor intensive goods and natural resource intensive products, USA increased its comparative advantage in natural resource intensive products while maintaining its specialization in physical capital and human capital intensive products.

Yeats (1985) tested the link between the factor proportions theory and the empirical results associated with the RCA model. The findings showed that the quantitative evidence developed by the RCA approach was fully consistent with the predictions of the theory – that is, countries with an abundance of capital will specialize in the production of capital-intensive goods while countries with an abundance of labor will specialize in the production of labor- intensive goods. With regard to regional trade agreement, Hutchinson and Schumacher (1994) used the RCA approach to study the North American Free Trade Agreement (NAFTA)'s impact on the Caribbean Basin (CB) and US market. They found that there was little threat of CB's major export products to the US market being displaced by the NAFTA as such products from CB have significant competitive advantage over Mexico's exports of the same products.

RCA has also been used to examine a country's international competitiveness. Herciu (2013) utilized RCA and Porter's Diamond to measure Romania's international competitiveness and found that Romania's export commodities had more competitive disadvantages than competitive advantages. Ariff and Hill (1985) analyzed the performance of ASEAN manufactured exports using RCA index with particular emphasis to the underlying structural changes. The RCA analysis suggested that export growth in general had been in accordance with ASEAN's changing factor endowments. In another paper on ASEAN, Maule (1996) showed that having similar patterns of comparative advantage was not advantageous for regional trade cooperation among ASEAN Free Trade Agreement (AFTA) countries as this implied that there were limited possibilities for trade creation. Batra and Khan's (2005) study on India and China's RCA reinforced the idea that both India and China contributed to a shift in comparative advantage in labour intensive manufactures in the global market.

These studies based on RCA index have been effective in explaining the trade structure of the countries regardless of their developmental stage or geographic location. Therefore, Balassa's work on RCA is still highly applicable in understanding the export potential of an economy.

3.2 Nepal related Studies

Studies on Nepal's international trade were mainly focused on identifying international trade determinants, evaluating the sensitivity of trade openness, and studying the impact of trade liberalization on income inequality. Acharya (2013) aimed to identify Nepal's international trade determinants (export, import and trade balance) using the extended gravity model. According to empirical results based on panel data containing Nepal's 21 major trade partners from 2005 to 2010, both exports and imports of Nepal were positively linked with the real GDP of her trade partner countries but exports increased at a higher rate than imports. On a similar paper, Thapa (2012) studied the determinants of bilateral trade flows of Nepal and 19 other countries using the gravity model approach. He found that Nepal has a potential for expansion of trade with 9 out of 19 countries, like, Bangladesh, Brazil and Italy.

Pant (2005) highlighted the challenges Nepal faced in improving its trade competitiveness and provided recommendations to address them. The challenges cited included a weak

legal framework, an absence of product and market diversification as well as a lack of comparative advantage in areas such as economies of scale, production and distribution systems, advanced technology, and marketing. The author suggested a holistic approach to revamp Nepal's trade sector through an improvement of infrastructure, technological upgrading, quality standardization and improvement, building up skilled human resources as well as an expansion of export markets and products. Pant and Panta (2009) examined the export diversification and trade competitiveness of Nepal with the use of the Real Effective Exchange Rate (REER) and Balassa's RCA model. The paper found that Nepal had low price competitiveness and productivity as well as a lack of export diversification which made the country more vulnerable to external economic shocks.

Chaudhary (2011) examined the impact of trade openness on Nepal's per capita income growth from 1990 to 2010 and found that Nepal's overall trade openness vulnerability was low. Acharya, Holscher and Perugini (2012) examined the effects of trade liberalization on inequalities of Nepal. A Computable General Equilibrium approach was applied on the 2006 Social Account Matrix for Nepal, simulating three liberalization scenarios (1) import liberalization; (2) export liberalization; (3) a combination of scenarios (1) and (2) under different exchange rate regimes. The sector which benefited most from trade liberalization was manufacturing whereby high-skilled labour was more intensively employed (as compared to agriculture and commercial services). The paper concluded that trade and exchange rate liberalization undertaken simultaneously had detrimental impacts on growth and might exacerbate income inequality and poverty due to the likely appreciation of Nepal's domestic currency.

These studies on Nepal's trade were helpful in understanding the challenges faced by the country in dealing with the issues related to international trade. For a small and land-locked country like Nepal, opening up remains even more critical.

IV.   SUMMARY OF NTIS 2010

The undertaking of the Nepal Trade Integration Strategy 2010 (NTIS 2010) served as a framework for the trade integration and liberalization of the Nepalese economy. The study provided guidance for the country's export strategy in the next three to five years and was initiated by Nepal's Ministry of Commerce and Supplies. Various institutions made contributions to this report; they are the United Nations Development Programme, the Government of Finland, the UK's Department for International Development, the International Finance Corporation and the International Trade Centre.

In 2008, the value of Nepal's exports accounted for nearly 45 percent of Nepal's GDP with the inclusion of labor export. This indicated a high level of trade integration in Nepalese economy that instigated trade expansion as an integral element for future "inclusive growth" in Nepal. Four major challenges faced in creating a competitive export sector for Nepal were highlighted. They included a lack of proper market access, an unconducive business environment, weak supply capacity of exporters and ineffective mobilization and management of resources of the Overseas Development Assistance (ODA). In order to deal with these challenges, NTIS 2010 set 4 capacity development objectives.

- Strengthen trade negotiations, primarily bilateral.

- Strengthen the technical capacity of business environment supportive institutions.

- Strengthen the export capacity of 'inclusive' export potential goods and services.

- Strengthen the government's capacity to coordinate and manage resources to implement the NTIS.

In order to achieve these objectives, the report listed 24 priority export potential products as the means to achieving "inclusive growth". This list was prepared after comprehensive discussions with the Nepalese business community as well as government officials.[2]

To assess export development opportunities, four indices were developed for each product: i) current export performance ii) current demand condition iii) domestic supply capacity and iv) potential socioeconomic impact of given goods or services. In the agricultural sector, cardamom, ginger, honey, lentils, tea, noodles, medical herbs and essential oils were listed. Cardamom, lentils and instant noodles showed overall high export potential.

For craft and industrial goods, handmade paper, silver jewelry, iron and steel, pashmina and wool products were listed, of which iron and steel were ranked highly in all of the first three indices. Handmade paper and wool products were considered as having highly positive social impact. Under services, tourism and labor services had both high export potential and high social economic impact. Under the category of other potential export sectors, transit trade services, sugar, cement, dairy products and transformers were listed.

In this paper, we made some considerations on the product list in performing RCA index analysis. Firstly, we considered only 16 priority products from NTIS 2010, primarily excluding the topics from service sector for which RCA index calculation was not feasible. Secondly, we considered 11 other products on which Nepal has traditionally been strong on exports. Therefore, this adds up to a total of 27 products which we will examine.

V. DATA, METHODOLOGY AND RESULTS

In the previous sections, the necessity of measuring comparative advantage in international trade has been illustrated. As comparative advantage cannot be measured directly, the concept of revealed comparative advantage (RCA) is introduced so that a country's relative advantage or disadvantage in exporting a particular good or product can be measured. By analyzing the computable RCA index, we can evaluate current trade policies and provide relevant recommendations. Balassa's index of RCA can be written as follows:

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[2] Refer to Appendix 1 for the list table.

$$RCA = \frac{X_{jt}^i / X_{jt}^W}{X_{Tt}^i / X_{Tt}^W}$$ ………. (1)

where,

X_{jt}^i= country i's export of commodity j in year t

X_{jt}^W= world export of commodity j in year t

X_{Tt}^i= country i's total export of all commodity (T) in year t;

X_{Tt}^W= world export of total commodity (T) in year t

Equation 1 can be also rearranged as follows:

$$RCA = \frac{X_{jt}^i / X_{Tt}^i}{X_{jt}^W / X_{Tt}^W}$$ ………. (2)

In this case, the RCA consists of 2 ratios: the numerator is the ratio of country i's export of product j to its total export while the denominator is the ratio of world export of the same product to total world export. The RCA index ranges from 0 to infinity. An export product with comparative advantage is defined as having a RCA index above 1 while and a product with RCA index below 1 does not have comparative advantage.

We computed the RCA indices for 27 products which include agro-food, craft and industrial food, etc. As mentioned earlier, apart from 16 NTIS products, 11 were added based on Nepal's traditional export strength.[3] These products and their accompanying Harmonized System (HS) codes are listed in Table 3. We can see the category of agro-food made up 11.2% of Nepal's total exports in 2011 with the top 3 agro-food products being cardamom (3.3%), lentils (2.6%) and tea (2.1%). Craft and industrial goods constituted 19.9% of Nepal's 2011 exports of which iron and steel took up a whopping 15.5%. Other notable export commodities not listed in NTIS 2010 are carpets (8.4%), juice (3.7%) and textiles (1.5%).

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[3]   These products were extracted from FNCCI (2011); TEPC (2010/11) and also during the interviews conducted with Trade and Export Promotion Centre officials during Benli's visit to Nepal in July 2013.

Table 3: Export products, HS codes and product share in total exports (2011)

Products	Product	HS code	% share in total export (2011)
Agro-Food	Cardamom	908	3.3
	Ginger	91010	0.6
	Honey	409	0.0
	Lentils	71340	2.6
	Tea	902	2.1
	Noodles	1902	1.1
	Medicinal herbs	121190	1.3
	Essential oils	330129	0.1
Craft and Industrial Goods	Handmade paper	48	0.8
	Silver jewelry	71	0.4
	Iron and steel	72/73	15.5
	Pashmina	621410/621420/621490/630120	2.8
	Wool products	611010/611691/611710/650590	0.3
Other Potential Export Sectors	Sugar	1701/1703	0.1
	Cement	6810/6811	0.0
	Dairy products	4	0.2
Other products	Carpets	57	8.4
	Pearl, stone etc	71	0.4
	Textile	53	1.5
	Garment	6111/6113/6114/6209/6210	0.1
	Thread	5204/5401/5508/5604	0.0
	Polyester yarn	5402	1.4
	Juice	2009	3.7
	Rawhide, skin and leather	41	1.3
	Sculpture and stone	9701/9702/9703	0.7
	Wood craft	4420/4414	0.0
	Metal craft	8306	0.1

Note: The shaded products are from NTIS 2010 priority list.

The four indispensable data sets, X_j^i, X_t^i, X_j^w, and X_t^w are collected from the United

Nations Comtrade database. The data collected is for the following years: 2000, 2003, 2009, 2010 and 2011. There are two reasons for this. Firstly, in UN Comtrade, these are the only years which contained the overall trade performance needed for analysis and no data was available after 2011. The missing years from the data set (e.g. 2001, 2002, etc.) are excluded as the data collected for these years is incomplete. Secondly, in order to have a progressive evaluation, a span of 12 years (from 2000 to 2011) would reveal the

changing RCA index pattern precisely and clearly. All currency units are in millions of USD. The total results for the RCA index is depicted in Table 4 and 5 below.

Table 4: Nepal's RCA index for NTIS 2010 priority export potential products (various years)

Agro-Food	2000	2003	2009	2010	2011
Cardamom	88.1	398.3	501.5	570.1	800.9
Ginger	181.4	260.1	196.5	126.0	146.4
Honey	4.4	5.8	0.4	0.3	1.0
Lentils	266.0	340.9	755.9	624.2	319.8
Tea	1.0	20.1	46.4	55.4	69.4
Noodles	6.0	16.8	24.7	20.1	25.7
Medicinal herbs	6.7	28.1	100.9	64.6	156.0
Essential oils	-	0.4	3.9	3.6	7.8
Craft and Industrial Goods					
Handmade paper	0.2	1.1	0.8	0.6	0.7
Silver jewelry	0.1	0.3	0.4	0.2	0.1
Iron and steel	0.0	1.6	3.7	4.2	3.8
Pashmina	344.1	197.6	200.0	167.1	185.5
Wool products	5.4	9.0	14.1	76.6	45.6
Other Potential Export Sectors					
Sugar	-	6.8	0.8	0.0	0.2
Cement	-	0.0	-	0.3	0.0
Dairy products	11.4	0.4	0.5	0.5	0.5

Source: Authors' calculation based on UN Comtrade database

Table 5: Nepal's RCA index for other products

Other products	2000	2003	2009	2010	2011
Carpets	141.0	50.4	95.9	82.7	100.1
Pearl, stone etc	0.1	0.3	0.4	0.2	0.1
Textile	0.3	23.6	50.8	68.6	62.0
Garment	22.5	15.1	0.5	0.5	1.3
Thread	-	-	0.3	0.2	0.0
Polyester yarn	7.4	19.2	15.0	10.2	15.9
Juice	-	3.5	35.4	5.0	40.1
Rawhide, skin and leather	1.9	3.8	5.5	6.3	7.4
Sculpture and stone	4.6	7.5	18.9	9.2	7.2
Wood craft	1.0	3.2	1.7	27.3	2.0
Metal craft	4.0	6.7	7.8	4.9	8.9

Source: Authors' calculation based on UN Comtrade database

The results reported in Tables 4 and 5 show the changing structure of Nepal's comparative advantage over time for the years 2000, 2003, 2009 – 2011. As per the categories in Table 4, the RCA indices are also classified into agro-food, craft and industrial goods, and other potential sectors, analogous to NTIS 2010 classification

For the sector of agro-food, Nepal indicates great export potentiality. As shown in Table 4 above, with the exception of honey, agro-food commodities show the largest RCA indices among the 16 commodities from the NTIS 2010 priority list. In accordance with Nepal's priority strategy in the agricultural sector, cardamom and lentils have the highest RCA indices. Cardamoms displayed a strong and steep growing trend (from 88 to 801 between year 2000 and year 2011) whereas lentils hit a peak in 2009 (756) which was followed by a decrease of 624 and 320 in 2010 and 2011 respectively.

Similar changes, albeit with relatively smaller fluctuations, occurred in the case of ginger, tea, noodles and medical herbs. The RCA indices for these products displayed a general upward trend with a slight dip in 2010 (except for tea for which its RCA index increased. On the other hand, the performance of honey is unstable as it lost its comparative advantage in 2009 and 2010 with a RCA of 0.4 and 0.3 respectively. While its RCA index bounced back to 1.0 in 2011, more data and studies may be required to determine if Nepal possess comparative advantage in the export of honey.

Nepal's overwhelming focus on agriculture goods is in contrast with that of most of its competitors which tend to rely heavily on the manufacturing sector to drive economic growth. An over-reliance on the agriculture sector could be risky. This is given that agricultural products are dependent on external factors such as weather and climate and Nepal would lose a very significant portion of export revenue derived from agro-food in the event of a natural disaster.

On the other hand, Nepal has low RCA indices for most labor-intensive products. The RCA index for handmade paper and silver jewelry are both below 1. This illustrates the comparative disadvantage of Nepal's manufacturing industry which could be hampered by a lack of advanced technology. With respect to the classical theory of comparative advantage, labor productivity should be used as a proxy for efficiency (Balassa, 1965). Although Nepal has an advantage of cheap labor, this benefit is offset by low labor productivity. Hence, it is of utmost importance that Nepal works on improving the technology available so as to increase labor productivity.

On the opposite trend, the RCA indices for craft goods such as pashmina, wool products and carpets (from Table 5) are relatively large in magnitude. Of these 3 products, Nepal has the greatest comparative advantage in producing pashmina which has RCA indices greater than 150 for all the years surveyed. This is followed by carpets, which is not included in NTIS 2010, with RCA indices greater than 50 throughout the period being studied. Wool products, in comparison, have lower RCA indices with the index reaching a peak of 76.6 in 2010. The high RCA indices are mainly because Nepal has traditional advantages in producing these products due to her factor endowments and excellent craftwork. Another reason could be because the technology used in the production of these three commodities has been upgraded which leads to increased labor productivity.

The export commodities classified under "other potential sectors", namely, sugar, cement and dairy products have extremely low RCA indices. For sugar, cement and dairy products, The RCA indices hovered between 0.0 to 0.5 for the period between 2010 and 2011. This implies that Nepal does not have a strong comparative advantage in the production of these goods albeit more studies may be required in order to confirm this finding. Nevertheless, reconsideration may be needed to justify their classification as 2010 priority products.

Finally, the RCA indices of the remaining of Nepal commonly exported products display interesting trends. Garments seemed to lose its comparative advantage as its RCA index decreased sharply from 15.1 in 2003 to 0.5 in 2009 and 2010. However, it reversed the downward trend in 2013 with a RCA index of 1.3. A possible explanation for this trend could be due to the Multi-Fiber Arrangement (MFA) which governed the world trade in textiles and garments from 1974 to 2004 through the imposition of quotas on the amount which developing countries could export to developed countries. India was one of the countries which faced a quota on garment exports. This could have driven Indian garment businessmen to neighboring Nepal instead to set up their garment business and export garments from Nepal which did not face such a quota. However, when MFA expired in 2005, these Indian businessmen could have returned to India to operate their garment business. As time is required for the relocation, this could have resulted in a lagged effect in the sharp decline of Nepal's garment exports in 2009 and 2010. The pickup of Nepal's garment industry in 2011 could have been a result of Nepal's own entrepreneurs who set up their own garment businesses using the technical know-how and skilled labor developed by the earlier Indian businessmen. That said, more studies and data will be needed to verify this hypothesis.

The ability to maintain a country's comparative advantage in producing an export commodity is important. An example of a product which Nepal was not able to maintain its comparative advantage is wood craft for which its competitive advantage peaked at 27.3 in 2000 but dropped significantly for the rest of the years.

The RCA indices of polyester yarn, rawhides, skins, leather, sculpture and stone are relatively stable. All of these products retained their comparative advantages from 2000 to 2011. For example, sculpture and stone's has an average RCA index of 9.48 while polyester yarn has an average RCA index of 13.54. Although threads has a long export history, it is a product which Nepal has comparative disadvantage in producing with its RCA indices ranging from 0 to 0.3 from 2009 to 2011.

Overall, the findings showed that of the list of 16 NTIS 2010 priority exports, only 10 (cardamom, ginger, lentils, tea, noodles, medicinal herbs, essential oils, iron and steel, pashmina, wool products) have RCA indices greater than 1. The other 6 products, namely honey, handmade paper, silver jewelry, sugar, cement and dairy products were found to have RCA indices of less than 1 which implies Nepal's lack of comparative advantage in producing these goods. More studies will need to be done in order to further verify these findings. In addition, carpets, which made up 8.4% of Nepal's total trade in 2011, displayed very high RCA indices of 82.7 and 100.1 in 2010 and 2011 respectively which is an indication that Nepal has comparative advantage in producing this product.

Another two products which displayed high RCA indices and could be exported with comparative advantage are juice and textiles which made up 3.7% and 1.5% of Nepal's total trade respectively in 2011. For juice, its RCA index ranged between 5.0 to 40.1 from 2009 to 2011 while that for garments was between 50.8 to 68.6. Hence, carpets, textiles and juice are products that could be added into the priority list.

VI. CONCLUSION

This paper focused on the analysis of Nepal's export potentials based on RCA index. In total, 27 products were considered, out of which 16 were taken from NTIS 2010 priority list. Of the list of NTIS 2010 priority products, the findings of this paper indicate that Nepal has a clear comparative advantage in only 10 products. These products are cardamom, ginger, lentils, tea, noodles, medicinal herbs, essential oils, iron and steel, pashmina and wool products. The majority of them are agro-based products which tend to have high volatility in prices and supply as they are subject to weather and climate conditions. A good strategy that the Nepalese government can undertake to complement the agro-based products will be to diversify into manufacturing where there is already comparative advantage in export commodities such as pashmina, wool products, carpets and textiles. These export-commodities are currently relatively labor- intensive and an introduction of advanced technology into these industries may increase labor productivity and hence, Nepal's comparative advantage in producing these products. While the upgrading of technology can be done relatively quickly, workers will need to be trained to learn how to use the more advanced machinery and this may take a longer time.

The RCA indices for the other 6 products, namely, honey, handmade paper, silver jewelry, sugar, cement and dairy products, are less than 1 which implies that Nepal does not have comparative advantage in producing these goods although more studies will need to be done in order to confirm these findings. In addition, we also found other stream of products, not listed in NTIS 2010, to have comparative advantage, chiefly carpets, textile and juice - products that Nepal is already good at producing and exporting. Other products include polyester yarn, sculpture, wood and metal crafts. Hence, such products can also be given priority and the Nepalese government can look into ways to promote their trade.

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Appendix 1: NTIS 2010 priority export potential products

	Agro-Food
1	Cardamom
2	Ginger
3	Honey
4	Lentils
5	Tea
6	Noodles
7	Medicinal herbs/ essential oils
	Craft and Industrial Goods
8	Handmade paper
9	Silver jewelry
10	Iron and steel
11	Pashmina
12	Wool products
	Services
13	Tourism
14	Labour services
15	IT and BPO services
16	Health services
17	Education
18	Engineering
19	Hydro-electricity
	Other Potential Export Sectors
20	Transit trade services
21	Sugar
22	Cement
23	Dairy products
24	Transformers

Source: MoCS/GoN (2010): Nepal Trade Integration Strategy (NTIS) 2010