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CAPACITY BUILDING WORKSHOP
TRADE AND TRADE POLICY ANALYSIS FOR THE POST COVID -19 RECOVERY

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VIRTUAL MEETING, MS TEAMS

Narrative on Self-study 3: Exploring Regional Integration and Value Chain Analyser (RIVA) for Policy Analysis by Dr. Biswajit Nag

Module-3

Slide-1
Welcome to the lecture on exploring regional integration and value chain analyser in short RIVA for policy analysis. The objective is to familiarise with this resource and help in understanding of this online resource.

Slide-2
Here, we will cover the following issues . First, we will discuss the existing available databases for extraction of value addition. Then we will provide the basic features of RIVA database, its Coverage and Usage. Detailed analysis using RIVA database will be done taking few countries, as examples. We will then discuss about the GVCs relationships, structure of value-added, participation in GVCs, backward and forward linkages and answering other policy questions through this database.

Slide-3
Trade in value added can be estimated using inter-country input-output tables. There are already publicly available databases such as UNCTAD EORA database, OECD-TIVA database. Apart from that, world input-output table published by consortium of 11 institutions based on national supply-use table can also be used. Also, RIVA Value Chain Analyser published by UNESCAP and FEALAC covering 72 economies and 38 sectors, based on Asian Development Bank MRIO database (ADB-MRIO).

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As mention RIVA is developed by the Trade, Investment and Innovation Division of the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), in collaboration with the Asian Development Bank (ADB), Economic Commission for Latin America and the Caribbean, Economic Commission for Africa, and Forum for East Asia-Latin America Cooperation.

Slide-5
RIVA database covers 71 individual economies and 2 economy clusters and 38 sectors, it has a very user-friendly interface, with better visualisation. It also helps the users to have a deep-dive into the analysis of GVC indicators for products and trading partners. There is an emphasises on conceptualization of policy questions while extracting data. This is also convenient for cross-country analysis and provides a holistic outlook on the relationships among countries, regions and sectors based on GVCs.

Slide-6
This slide shows how to extract the list of sectors. These sectors have their own ids and long and short name. For eg. manufacturing low-technology includes many sectors such as foods & beverages, textiles, leather & footwear, etc.

Slide-7

Countries can be extracted through the URL. RIVA also provides another aspect to create economy groups. Some of the groups are already listed on the website, for eg. APEC, APTA, Asia-Pacific, etc.

Slide-8
GVC relationships can be seen on the first page of RIVA website. In this case we have to identify the exporting country and the year. For example, we have taken Nepal as the country and 2017 as the year.

Slide-9
GVC relationship provides overview of the countries. In our case it is Nepal for 2017. So, GVC relationships are divided into two parts. Backward and forward linkages. That is how much other countries contribute to Nepal's exports and how much is the contribution of Nepal in other country's exports. In this case both backward and forward linkage is around 15%.

Slide-10
GVC Relationships can be further provided by the exporting sector. We can see the top five exporting sectors and their contribution in Nepal's backward and forward linkages. After clicking on the sectors, we can also see the main partner countries.

Slide-11
The GVC relationships can also be described from the perspective of partner economies. Here, the backward and forward linkages are shown in terms of partner countries in ascending order. This data is for 2017. And if any country is clicked, for e.g Singapore or China—these countries' contribution to Nepal's exports and Nepal's contribution to these countries' different sectors are presented. This will be the same case for other countries. If we click on the countries, we get the list main sectors which are contributing to Nepal's forward or backward linkages.

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In this case we have considered Nepal's export to Bangladesh. So, gross exports can be divided into six parts, first, domestic value-added in exports, directly consumed by the importer is further divided into parts—(1.1)coming from exporter's intermediate domestic production and secondly, (1.2)coming from exporter's final domestic production. Domestic value-added in exports, used for the production of further exports is divided into parts—(1.3) consumed by the initial exporter and (1.4)consumed by economies other than the initial exporter. So, 1.3 is the Nepal's exports going to Bangladesh and coming back to Nepal with additional value addition. (1.5) is the foreign production used in exports, consumed by the importer, which is the foreign value added. It is therefore the contribution of foreign countries in Nepal's exports. And, then (1.6) is the double counting when goods cross the border multiple times in global value chains.

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Let us now try to understand the structure of value-added, the Nepal's export to Bangladesh can be divided into six parts. As can be seen that double counting part is only 1.68%. And the share of produced abroad and used in Nepal's exports to Bangladesh is 10.92%, which is the backward linkages. And the share of production in Nepal consumed by Bangladesh in exporting is13.45%, which is the forward linkages. So, it can be said that Nepal is having around 24% of its GVC participation with Bangladesh.

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If we, do it with India, we can see that the share of intermediate output produced in Nepal and consumed in India is 52.92% and share of final output produced in Nepal and consumed in India is 18.96%. And the share of production in Nepal consumed by India in exporting is 7.34% and share of produced abroad and used in Nepal's exports to India is 17.70%. So Nepal is using 17.70% of foreign inputs in its exports to India. And India is using Nepal's exports as inputs for further export to world by 7.34%.

Slide-15
If we look at Nepal's export to select Asian countries, by considering China, Republic of Korea (ROK), Japan and Thailand, then we can see that share of production in Nepal and consumed by China, Japan and Thailand is quite high, especially for Thailand which is 35.98%. The forward linkage is quite high. On the other hand, if we see the share of produced abroad and used in Nepal's exports to different countries, which is the backward linkage see that for different countries like China it is 17.36%. And the goods exported by Nepal to these countries, are more than 60%.

Slide-16
If we take a specific product, for example, Nepal's export of textile products to India, we see that the share of production in Nepal consumed by India in exporting is 9.32%. So, India is considering these imported inputs in its own exports. And the Share of produced abroad and used in Nepal's exports to India is 23.96%, which is the backward linkages. And 9.32% is the forward linkage.

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In another example, we made an attempt to understand the close relationship between south-east Asia and East Asian countries like Japan and Republic of Korea. We can see that the double counting is quite high. For example, 12% & 18.79%. So, these are the goods crossing border several times and there exits the possibility of double counting. We can also see the participation of these countries in GVCs with Japan and ROK, which is quite high. If you see it is 29.82% and 12.79% (summing them more than 40%) with Japan. And also, more than 47% with ROK.

Slide-18
Going to the third component, which is the participation in GVCs. We are considering Nepal and India, where we highlight Nepal's exports of all sectors to India are GVC related compared across South and South-West economies. So, we can se that the foreign production used by Nepal in exporting to South & South-West Asian economies is the maximum. That's basically the green colour.

Slide-19
Now, considering a particular sector, for example textile and textile products, so besides Nepal's GVC relationship with India—the breakdown of Nepal's exports of textile & textile products to other South and South-West Asia are explained. Also, the foreign production consumed by the importers is the highest.

Slide-20
In another example we search for group of economies, some of them are pre-specified. RIVA site also provides opportunity to create customised own country groups. This can be done by clicking on 'Download data'. Here, we have selected the Asia-Pacific economies as the

exporting economy and South-East Asia as the importing economy, to understand the close trade relationship with each other.

Slide-21
It can be seen that the domestic production used in importers export is significantly high in the case of Russia. And in case of the foreign production consumed by importer is significantly high. Even the value of double counting is quite high (for example with Singapore). This signals the extent of fragmentation.

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We now concentrate on backward and forward linkages. Backward linkage is the source economies which are exporting to Nepal, in this case we are trying to understand other countries contribution in Nepal's export of intermediate and final goods.

Slide-23
Nepal's exports are significantly backed-up by Asian countries which are explained in this diagram. So, the share of India and China is the maximum (45.65% & 14.49%). Therefore, the majority of the backward linkages is coming from Asia-Pacific economies (around 75%). Also, the regional dependence can be witnessed here.

Slide-24
Forward linkage means here where Nepal contributes towards export of other countries. Here, the exporting country is Nepal and the product we have selected is textile and textile products. So, it goes to other countries, they are processing it further for exporting to third countries. However, it might be coming back to Nepal as well.

Slide-25
In Nepal's forward linkages, the contribution of Nepal to export production in other economies is the maximum for Turkey, India and Singapore (26%, 17% & 15%). So, Nepal's exports are being used as imported inputs by Asian countries as can be seen from this diagram.

Slide-26
By concentrating on other aspects, here on this page, you can create country groups, and thus, by filling data in different sections, the data can be downloaded. This can be done by clicking 'Download data'.

Slide-27
This slide shows how to create own economy group.

Slide-28
Further, we can download the data. This slide shows the Nepal's export of textile products and what are the different sources. Column A explains the sources.

Slide-29
So, RIVA Database provides a tool by which we can gauge the state of GVC integration of a country with other countries both at the aggregate and sector level. This information can help Countries to identify need for enabling/appropriate trade policy tools, technology transfer,

assessing skill requirements, etc for specific sectors. When a country observes that their trade is increasing due to GVC participation, they might need more data and analysis to back up a policy to accentuate the participation. The data actually provides evidences. Even countries can highlight the importance of domestic policies such as infrastructure development, promotion of SMEs etc for sectors which are in GVCs or part of an emerging GVCs. In depth information such as the sources of intermediate inputs and destinations of domestic value-added by comprehensive data extraction are extremely useful to understand the involvement of trade in the development of particular sector.
A clear and simplified visualisation of GVC through RIVA can help policy makers to have a better introspection.

Thank You


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