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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

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JOURNAL OF INDIAN LEATHER TECHNOLOGISTS' ASSOCIATION (JILTA)

Indian trade deficit widens further in July

In July, merchandise exports increased 14.3% compared to the same month last year, down from the 17.6% expansion recorded in June and totalling USD 25.8 billion. In descending order, the fastest growing export categories in July were petroleum products, gems and jewellery, and chemicals. Annual growth in the 12-month trailing sum of exports accelerated a tad to 11.8% in July from 11.0% in June. The sum of exports in the 12 months up to July was USD 316 billion, slightly higher than June's USD 313 billion.

Meanwhile, merchandise imports surged 28.8% in July (June: +21.4% year-on-year), with imports totalling USD 43.8 billion. July's strong reading was primarily due to a 57.4% increase in oil imports. Non-oil imports also rose strongly, with growth of 20.2%.

The 12-month trailing sum of imports increased 16.4% in July, up from 15.2% in June. Consequently, the 12-month total of imports reached USD 484.6 billion in July, more than June's USD 475 billion.

The merchandise trade deficit grew to USD 18.0 billion in July from 16.6 billion in June, the widest since May 2013. Looking ahead, the deficit is likely to remain large in the coming months: Indian exporters—who are exempt from the Goods and Services Tax (GST)—continue to be hindered by delayed GST refunds. The ongoing trade war between China and the United States also adds uncertainty for the external side of the economy, as the U.S. is India's largest export market and China is India's largest import market. Moreover, economic panellists forecast higher global oil prices this fiscal year compared to last year. Economic panellists forecast that exports will expand 11.8% in FY 2018 and imports will rise 15.0%, bringing the merchandise trade deficit to USD 190 billion. In FY 2019, we expect exports will expand by 8.4%, while imports will rise by 7.6%, resulting in a merchandised trade deficit of USD 202 billion.

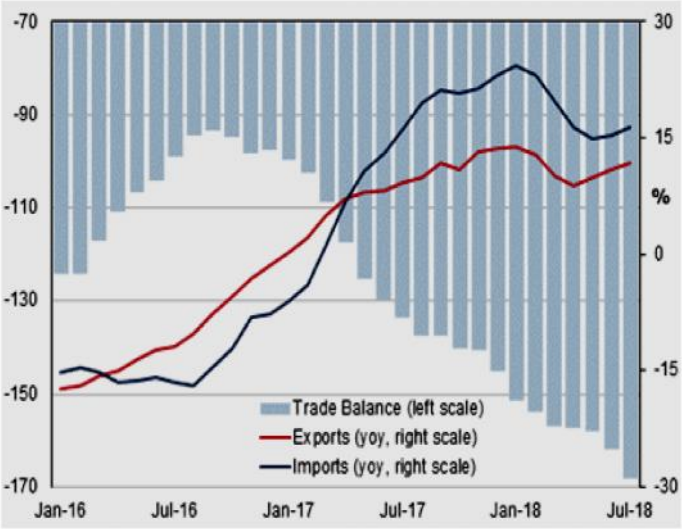
The composite Purchasing Manager's Index (PMI), produced by Nikkei and IHS Market, also fell to 51.9 in August from the 21-month high of 54.1 in July. Nevertheless, the reading was still above the 50-point threshold that separates expansion from contraction in the private sector.

The manufacturing PMI ticked down to 51.7 in August from 52.3 in July but remained in expansionary territory, where it has been for exactly one year. The outturn in August was due to softer increases in output and new orders. With business still busy in August, manufacturers raised both employment levels and purchasing activity. In terms of prices, input costs rose again in August, leading firms to increase output prices in order to protect their profit margins. Looking ahead, business sentiment in the manufacturing sector looking at the coming 12-month period decreased slightly in August. The Nikkei services PMI fell to 51.5 in August from 54.2 in July but remained in expansionary territory for the third month in a row. Although new business inflows rose for the sixth consecutive month in August, the rate of increase slowed from July. As has been the case for the past 11 months, firms raised their headcounts in August, particularly in the information and communications sector. On the price front, input inflation continued to accelerate markedly, with reports of higher oil prices pushing up costs. Output inflation, however, remained low as businesses' profit margins took a hit. Looking ahead, business sentiment in the services sector regarding the coming 12-month period improved in August to a three-month high. Focus Economics Consensus Forecast panellists see fixed investment rising by 8.0% in FY 2018, which is up by 0.5 percentage points from last month's forecast. For FY 2019, the panel expects fixed investment to increase 7.6%.

Annual industrial production growth accelerated to 7.0% in June from May's revised 3.9% (previously reported: +3.2% year-on-year), overshooting market analysts' expectations of 5.5% and representing a four-month high. The strong reading in June was broad-based across industrial sectors but was notably supported by a large expansion in the manufacturing sector. The reading in June also benefitted from a low base effect.

On a use-based classification, industrial production in June was boosted by strong output expansions of consumer durable, primary, capital and infrastructure goods. Dragging on overall growth were weak readings for intermediate and consumer non-durable goods. Focus Economics panellists expect industrial production to increase 6.2% in fiscal year 2018, which is up 0.2 percentage points from last month's forecast. For fiscal year 2019, the panel expects industrial output to expand 6.5%.

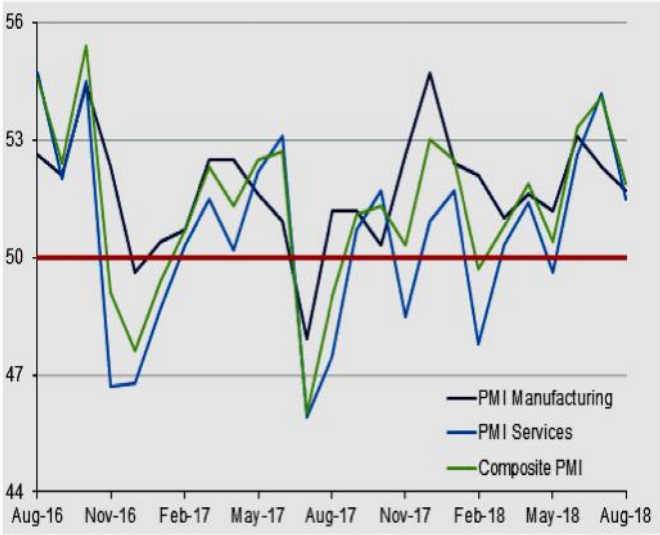
Trade Chart of India:



Note: 12-month sum of trade balance in USD billion and annual variation of the 12-sum of exports and imports in %.

Source: Ministry of Commerce and Industry and Focus Economics calculations.

Indian PMI Chart



Note: Nikkei India Purchasing Managers' Index (PMI). A reading above 50 indicates an expansion in business activity while a value below 50 points to a contraction.

Source: Nikkei and IHS Markit.

Goutam Mukherjee

Dr. Goutam Mukherjee
Hony. Editor, JILTA

From the desk of General Secretary

60th Annual General Meeting

As per AGM Notice posted on 7th September, 2018, the 60th AGM was held at 03.00 PM on Saturday the 29th September, 2018 at the Auditorium of Indian Science Congress Association, 14, Dr. Biresh Guha Street, Kolkata – 700 017.

Kerala Flood Relief

As informed earlier, the Executive Committee in an Emergency Meeting convened on 21st August, 2018 decided to donate a sum of rupees One lakh towards relief of several lakhs of people of Kerala affected by the worst flood of the century. The amount was transferred to Kerala Chief Minister's Distress Relief Fund and the Hon'ble Chief Minister of Kerala has acknowledged receipt with thanks.

It may be recalled that our Association has always contributed to the cause of relief to the people affected by any natural calamity like Aila, earthquake in Nepal, Tsunami in Chennai etc.

LEXPO Siliguri – XXV

The next LEXPO at Siliguri will be the 25th in series. We have already been allocated Kanchanjungha Krirangan adjacent ground from 17th December, 2018 to 8th January, 2019 for organizing Silver Jubilee of LEXPO at Siliguri.

Seminar at Chennai during IILF-2019

Up to Feb., 2018, we have organized seminars at Chennai on the second day of IILF in the last four consecutive years. It has been decided that with effect from 2019, this seminar at Chennai will be termed "Prof. Sasanka Sekhar Dutta Memorial Lecture" and the first such lecture will be organized on 2nd February – the second day of IILF-2019.

You are requested to :-

a) Kindly inform us your 'E-Mail ID', 'Mobile No', 'Land Line No', through E-Mail ID : admin@iltaonleather.org or over Telephone Nos. : 24413429 / 3459 / 7320. This will help us to communicate you directly without help of any outsiders like Postal Department / Courier etc.

b) Kindly mention your Membership No. (If any) against your each and every communication, so that we can locate you easily in our record.

(Susanta Mallick)
General Secretary

Executive Committee Members meet every Thursday at 18-30 hrs. at ILTA Office.
Members willing to participate are most welcome.

Leather Industries of Kolkata vis-à-vis Present Status of Cr^{3+} and Cr^{6+} Contents in Physical Environment of East Kolkata Wetlands

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Key Words: Chromium, Composite wastewater, East Kolkata Wetlands, Kolkata Leather Complex

Introduction:

The leather industry in India holds a very prominent place in the Indian economy. One of the oldest manufacturing industries of India is leather industry and it has a significant contribution in Indian economy. Nearly 2.5 million People in India are engaged with this leather industry, directly or indirectly. Indian leather industry shares 12.93% of the world's leather (hides/skins) production that annually amounts to 300 million sq. m. India has earned a total of US$ 1.36 billion during 2017-18 by exporting leather goods of which leather footwear component shares US$ 340 million, leather garments shares US$ 519 million while finished leather shares US$ 874 million (IBEF, 2018; www.Ibef.org). Indian leather industry has grown unswervingly because of steady availability of raw materials. Compared to global livestock populations, India holds 21% cattle-buffalo and 11% goat-sheep population. However, leather making industry has always been considered as an environmentally hostile industry. Interestingly, leather is, in a way, the by-product of meat t industry and processing of huge raw hides and skins that we produce has earned a bad reputation for high degree of environmental pollution. Puntener (2001) already pointed out that around 150 kg finished leather is produced from every 1,000 kg wet salted hides and skins and in this process 150 kg split, 700 kg solid wastes and 30-35m^3 of wastewater having 400 kg TSS and TDS are produced. Worldwide, every year, 15 million tons of hides and skins are processed from which a total of 6 million tons of solid waste and 600 million m^3composite effluent is discharged (Rajamani, 2010). Though tannery effluent is characterized by high total suspended solids, total dissolved solids, biological oxygen demand, different salts of sodium, ammonium, chloride, sulfate, carbonate and bicarbonate yetthe most concerning pollutant is the Cr, as basic chrome sulfate, is still the choicest tanning agent for Kolkata's tanning industries. Nearly 80-90% of leather today is tanned with chromium salts (Basic Chromium Sulfate) (Tsumita et al., 2015). Saravanbahavan et al. (2004) mentions that in the chrome tanning processes only 50–70% Cr is fixed in leather moiety and the rest is discharged with effluent. The Cr exists primarily in the trivalent (Cr^{3+}) and hexavalent (Cr^{6+}) states in the environment. Though Cr^{3+} is considered to have lower toxicity for being impermeable through bio-membranes and it also has a role as essential trace element for living organisms, yet,Cr^{6+} is readily permeable through bio membranes and is highly toxic to living organisms, rather carcinogenic to humans when contaminates our ambient environment (Vutukuru et al., 2007).

The present study site, i.e. East Kolkata Wetland (EKW), which is designated as a Ramsar Site (No. 1208) in 2002, is located on the eastern fringe of Kolkata city. Leather making industries over nearly a century have been developed on the western border of EKW at three prominent agglomerates (Tangra, Topsia and Tiljala agglomerates). However, due to rapid east-bound expansion of Kolkata city nearly 30% growth between 1981 and 2001, (http://www.indiaonlinepages.com/population/kolkata-population.html), the pollution related issues started coming to the forefront. Meantime, in sequel of the Honourable Supreme Court verdict, these leather industries are shifted nearly 20 km away from Tangra, Tiljala and Topsia agglomerate to southeastern boundary of EKW at Bantala and has been named Kolkata Leather Complex (KLC). However, in the process of shifting of tanneries has brought this environmentally challenged industry in the context of safety of delicate

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ecosystems nearer to the Sunderbans Biosphere Reserve and Bay of Bengal. A total of 438 relocated tanneries have received lease hold land at the KLC and 138 new tanneries have purchased land to set up industry afresh. Out of the relocated tanneries, nearly 300 are presently operating at KLC.

Even after establishment of KLC equipped with Common Effluent Treatment Plants (CETSs), operations in some smaller units at the past industrial agglomerates cannot be ruled out. Before relocation of tanneries from east Kolkata tannery agglomerates, composite tannery effluent being mixed with Kolkata municipal wastewater, wastewater from different small-scale industries and Kolkata city runoff, used to run through the EKW as a composite wastewater. Nearly 0.71 million m^3d^{-1} (CPCB, 2009) composite wastewater used to pass through the Dry Weather Flow (DWF) and Storm Water Flow (SWF) channels of EKW and around 30% of the wastewater is drained into the wetlands, available for nutrient recycling (Sarkar et al. 2009). This wastewater has been productively used in agricultural and piscicultural practices for last 100 years (Ghosh, 2010; Pal et al. 2016a, 2018). Previous studies (Chattopadhyay et al. 2000ab, 2002, 2004; Chatterjee et al. 2002, 2007; Goswami et al. 2013; Pal et al. 2014, 2018b)have recorded that composite wastewater contained different organic and inorganic materials, including metals,shared majorly by Cr. Previous works (Chattopadhyay et al., 2002, Chatterjee et al., 2010, Aich et al., 2017) also pointed out that the wastewater is excellently ameliorated by the way of use and reuse of wastewater in agriculture and pisciculture on the journey through the EKW. However, use of tannery effluent mixed waste water to grow human edibles at the EKW always raised several questions and attracted the attention of the environmental scientists, especially to explore the harmful effects of waste Cr, if any. The present study mainly focuses on the current status of Cr^{3+} the Cr^{6+} levels in wastewater, wastewater-fed fish ponds and sediments of EKW areas. The present dataset are compared with the dataset as published 18 years ago (Chattopadhyay et al. 2000a) to focus on the changes, if any, in both Cr^{3+} and Cr^{6+} contents at the EKW areas. This work will also compare the present amelioration efficiency of the wetland system with the recorded past efficiency so far as Cr is concerned.

Material and methods:

Study sites

The area of interest is EKW (lat. 22°33² -22° 40² N; long. 88°25² -88°35² E) ecosystem, which is the only large-scale formal system of wastewater-fed pisciculture and known as the Waste Recycling Region (Bunting et al. 2010).The total area of EKW is 12,741 hectare of which water spread area is 5852 ha (including degraded area), 4959 ha area is used for agriculture, 602 ha is used for garbage farming area and settlement area covered 1326 ha. Within EKW 109 villages, located in 37 mouzas, which account for 11% of the total land use. The elevation of EKW area ranged from 3-6.5 m with a gradual slope towards east from west. In summer (March-May) temperature was laid between 35-41°C and in winter (November –February) 10–16 □ C. In EKW average rainfall was 1000–1600 mm yr^{-1} and 80% of rainfall was occurred during Monsoon (June to October). In EKW nearly C"3000 t of solid wastes were deposited daily in the EKW areas (Pal et al. 2016b). The EKW areas are recorded to produce C"150 tons d^{-1} vegetables and 18000 tons yr^{-1} fish (Ghosh, 1999; Bunting et al., 2010).

The sampling sites are shown in Fig. 1 and distinctive characters of each sites are given below: Site 1 (22° 322 26.5" N, 88° 242 19.1" E) is a tannery effluent carrying canal, located around 1 kilometre (km) away from Tangra-Topsia-Tiljala tannery agglomerate; Site 2 (22° 322 27.7" N, 88°242 18.3" E) is adjacent to Site 1 and it is a tannery effluent-fed fish pond; Site3 (22° 312 44" N, 88° 252 14.2" E) is a composite wastewater carrying canal where tannery effluent, municipal sewage, other small-scale industries wastewater and Kolkata city run off are mixed. This site is located in Chowbaga and it is around 8 km away from tannery agglomerates and 4 km away from site 1;; Site 4 (22°302 28.9" N, 88°312 14.3" E) is located around 15 Km away from Site-I, where pre-treated tannery effluent from the CETPs of Kolkata Leather Complex (KLC) is mixed with the composite wastewater carrying SWF and DWF canals. Site 5(22° 312 21.7" N, 88° 412 14.4") is on the same canal at Kultigong lock gate. It is nearly 40 Km away from the Site 1 and in this site the composite wastewater is finally discharged in the Kultigong river.

Sample collection and analysis

From each sites the water samples were collected between 8 am and 10 am during 1st week of every month, in clean glass-stopper bottles. The bottom soils/sediments were collected from the same in Zip-pouch. The soil samples were then dried in hot air oven at 60°C. Then the dried samples were handpicked of visible roots and leaves, grounded to powder and sieved with a 2-mm sieve. The water and soil samples were then prepared by following the standard methods of Eaton et al. (2005) and Jackson (2000). The Cr^{3+} and Cr^{6+} concentrations were analysed by Metrohm 844- Ion-Exchange Chromatograph. However, previous published work of Chattopadhyay et al. (2000a) followed Bassett et al. (1978) for determination of Cr^{3+} and Cr^{6+} concentrations. All gravimetric analyses were done by using Mettler AE 240 monopan electronic balance. All graphical representation was prepared by Origin 2016 software.

Results and Discussion

Cr in wastewater

In the present study the Cr^{6+} (367.67 ± 39.85 µg L^{-1}) and Cr^{3+} (2.98 ± 0.78 mg L^{-1}) concentrations are highest in Site 1. Because the composite tannery effluents from units those are yet to be relocated from East Kolkata tannery agglomerates to KLC are directly discharged here without any pre-treatment. However, due to long residence time of wastewater at the composite effluent-fed fish pond, i.e., in Site 2, the Cr^{6+} (21.87 ± 4.84 µg L^{-1}) and Cr^{3+} (0.87 ± 0.47 mg L^{-1}) concentrations in water are comparatively much lower than in Site 1. As Kolkata city sewage through Ballygunge Drainage Pumping Station and composite tannery effluents from east Kolkata tannery agglomerates are mixed at Site 3, both the Cr^{6+} (4.93 ± 0.72 µg L^{-1}) and Cr^{3+} (0.44 ± 0.18 mg L^{-1}) are further dropped down possibly due to dilution by municipal wastewater that is almost devoid of Cr (https://www.keiip.in/bl3/PDF). However, in Site 4, despite reintroduction of pre-treated tannery effluent from CETPs of KLC, the Cr^{6+} (38.83 ± 4.76 µg L^{-1}) and Cr^{3+} (1.09 ± 0.17 mg L^{-1}) are marginally increased compared to the concentrations in Site 3. Interestingly, these concentrations state the excellent efficacy of the CETPs of the KLC as the concentrations are well below the safe limits set by CPCB (2017), WHO (2008) and USEPA (2011). At the final discharge point in Site 5 both Cr^{6+} (1.4 ± 0.7 µg L^{-1}) and Cr^{3+} (0.13 ± 0.09 mg L^{-1}) concentrations are lower than all sites. The notable efficiency of Cr removal from wastewater may be, due to the prevailing hydrodynamic condition of wetland ecosystem, slow movement of water and favourable pH in the 40km canal stretch as well as in the wastewater-fed fish ponds. Except Site 1, Cr^{6+} concentration of all other sites are well below WHO (50 µg L^{-1}), USEPA (100 µg L^{-1}) and CPCB (100 µg L^{-1}) safe limit for inland waters. However, Cr^{6+} concentrations in Site 1, although also below the CPCB (2017) public sewers standard (2000 µg L^{-1}), yet the concentrations are higher than the safe limits for inland water set by CPCB (2017), WHO (2008) and USEPA (2011). On the other hand, Cr^{3+} content is above the CPCB standard set for total Cr for public sewersonly in Site 1. Present concentrations when compared with those of recorded 18 years ago (Chattopadhyay et al. 2000a) we find that at present Cr^{3+} values in Site 1, Site 2 and Site 4 is higher than the values recorded in the past. However, A reduction of 99.6% for Cr^{6+} and 95.8% forCr^{3+} contents have been recorded between Site 1 (primary source point) and Site 5 (final discharge).Whereas, a reduction of 89.4% forCr^{6+} and 88.6% forCr^{3+} content have been recorded between Site 4 (KLC area) and Site 5. Moreover, may be due to the long wastewater residence time and uptake by wetland flora and fauna, a reduction of 94% for Cr^{6+} and 70.9 % for Cr^{3+} contents have been recorded between Site 1 and Site 2, the wastewater-fed fish pond.

Cr in soil/sediment

Before discharging the chrome-liquor it is treated to increase the pH level to precipitate out Cr in the processes of chrome-recovery. Thereby, while discharging composite wastewater into the environment the waste Cr is readily precipitated in the sediment. For this reason, the Cr species are present in very low amount in water but found in high concentrations in soil and sediment. Like wastewater, the Cr^{6+} (0.42 ± 0.04 g kg^{-1}) and Cr^{3+} (29.4 ± 4.2 g kg^{-1}) concentrations are highest in Site 1 followed by Site 2 (Cr^{6+} : 0.15 ± 0.01 g kg^{-1}; Cr^{3+} : 10.32 ± 2.29 g kg^{-1}). However, the degree of reduction of Cr^{6+} and Cr^{3+} between Site 1 and Site 2 is not similar with that of wastewater. The Cr^{6+} and Cr^{3+}concentrations are reduced 65.5% and 64.9% respectively between Site 1 and Site 2. Besides, when compared the present value with that of recorded in the past for Site 3 we observe a drastic change. In fact, at present the volume of discharge of composite tannery effluents is reduced in Site 1 due to relocation of majority of big tanneries at the KLC. Though the concentrations of Cr species in wastewaters are recorded slightly higher in Site 4 than in Site 3, however, in sediment the Cr^{6+} (0.06 ± 0.12 g kg^{-1}) and Cr^{3+} (1.55 ± 0.24 g kg^{-1}) concentrations of Site 4 is lower than Site 3 (Cr^{6+} : 0.12 ± 0.01 g kg^{-1}; 1 Cr^{3+} : 2.78 ± 0.5 g kg^{-1}). Composite wastewater discharged after treatment at CETPs of KLC together with high growth of macrophytes in canal water and intense agricultural activities in and around Site 4 could account for such result. Lower concentrations of Cr in wastewater due to treatment processes and further removal by macrophytes and agricultural activities in Site 4 decreased the Cr concentrations in sediment partition. In Site 5 the Cr^{6+} (0.002 ± 0.001 g kg^{-1}) and Cr^{3+} (1.07 ± 0.17 g kg^{-1}) concentrations are negligible and the finding corroborated with the Chattopadhyay et al. (2000a). From Site 1 to Site 5 Cr^{6+} and Cr^{3+} are reduced to the extent of 99.62% and 96.36% respectively, whereas from Site 4 to Site 5 the Cr^{6+} and Cr^{3+} are reduced in the tune of 97.17% and 94.73% respectively. This result amply reflects the efficiency of EKW ecosystem in ameliorating waste chromium in the environment. Unlike Chattopadhyay et al. (2000a), present study records a significantly low Cr^{6+}: Cr^{3+} ratio at all sites (Fig. 4), which may suggest a situation that lacks optimum physico-chemical and biological conditions for Cr oxidation (Chattopadhyay et al., 2010) in one hand and lower bioaccumulation of Cr^{3+} species or higher uptake of Cr^{6+} by macrophytes on the other.

Conclusion

The harmful activities of Cr is reliant on its valance. Tanning operations discharge the unutilised Cr with its effluent in trivalent state. Though Cr^{3+} is reported an essential micronutrient and helps as glucose tolerance factor (Scawarz and Mertz,

1959; Vincent, 2013) in carbohydrate and lipid metabolism (Anderson, 1995; Davis and Vincent, 1997) yet some studies (Rutland 1995; Sawyer 1997) reported that both Cr^{3+} and Cr^{6+} are interfering with human physiological processes depending on their concentrations in ambience. Actually, Cr^{3+} released in the environment with tannery effluent is very much subject to conversion to various valence states. Murray and Tebo (2007) and Chattopadhyay et al. (2010) point out the role of soil microbes along with some physico-chemical agents (UV ray, Mn and Fe) in conversion of Cr^{3+} to Cr^{6+}. Photochemical oxidation of Cr^{3+} to Cr^{6+} is also found to be significantly high at the surface level of the soil. As a result the released Cr in the environment has ample potential to migrate from water and soil system to bio-system. However, different study has reported the presence of high concentration of detoxification pathways via the superoxide dismutase, catalase and the metal arresting protein, metallothionein, in the flora and fauna of EKW (Singha Roy et al. 2011; Goswami et al. 2013; Pal et al. 2014; Aich et al. 2017). Biota growing at the area with high Cr concentrations in their ambient environment have their innate capability to protect their physiological activities against Cr toxicity.

From the present study a steady natural amelioration of waste Cr along the 40 km course of the canal is observed, which signifies the intrinsic capacity of wetlands in water treatment and quality improvement. From the present study it is also revealed that on an average 95.8-99.6% reduction of Cr species in wastewater and 96.4-99.6% in sediment between Site 1 and Site 5 in EKW is evident. However, nearly 37% of the wetland area and 75% of the water spread area of this wetland are lost in the meantime (Chatterjee et al., 2016; Li et al., 2016). Even after such onslaught on the natural wealth, by which Kolkata city is blessed the EKW is working with such amazing efficiencies. May be the technological intervention in ameliorating composite tannery wastewaters in CETPs at KLC and surely the declining population growth in Kolkata Metropolitan Area (KMA population is estimated to be 15,001,383 in 2018, and thereby, between years 2001 and 2018, the growth of population in KMA has declined to 12.6% from estimated growth rate of 30% in previous two decades; http://www.indiaonlinepages.com/population/kolkata-population.html) have positive roles in encouraging the conditions to sustain ameliorating efficiency of this wetland system even today, so far as waste Cr is concerned. Interestingly, such ameliorating efficiency of EKW is recorded to be similar, and even higher, when compared to the previous report published decades back (Chattopadhyay et al., 2000a). However, absence of any treatment plant at Site 1 the Cr concentration is higher than CPCB safe limit, thus action should be taken in this regard. Also attention must have to be taken to recycle Cr in KLC area to protect nature from any harmful effect of Cr in near future in one hand and to minimize wasting global Cr resource. In India a substantial amount of valuable mining resources are wasted by different industries. The tanning industries, likewise, drain out 30-50% Cr after tanning operation. Thus, we would urgently look forward to sensitive attitude towards handling the waste Cr and in-house technological improvisation and application of modern technologies to recover and reuse of waste Cr from tanneries. Therefore, to enjoy the sustained ecological subsidy from EKW in wastewater treatment, social awareness, technological improvement and a holistic management plan are much needed to protect this Ramsar site which serves the KMA for nearly a century. If we externalize the cost of a single ecosystem service of this wetland, the amelioration of wastewater, we can estimate that this EKW areas save Kolkata city (India's seventh most populous city with 5.5 million population) a staggering Rs 4,680 million a year in sewage treatment costs (Kundu and Chakraborty, 2017).

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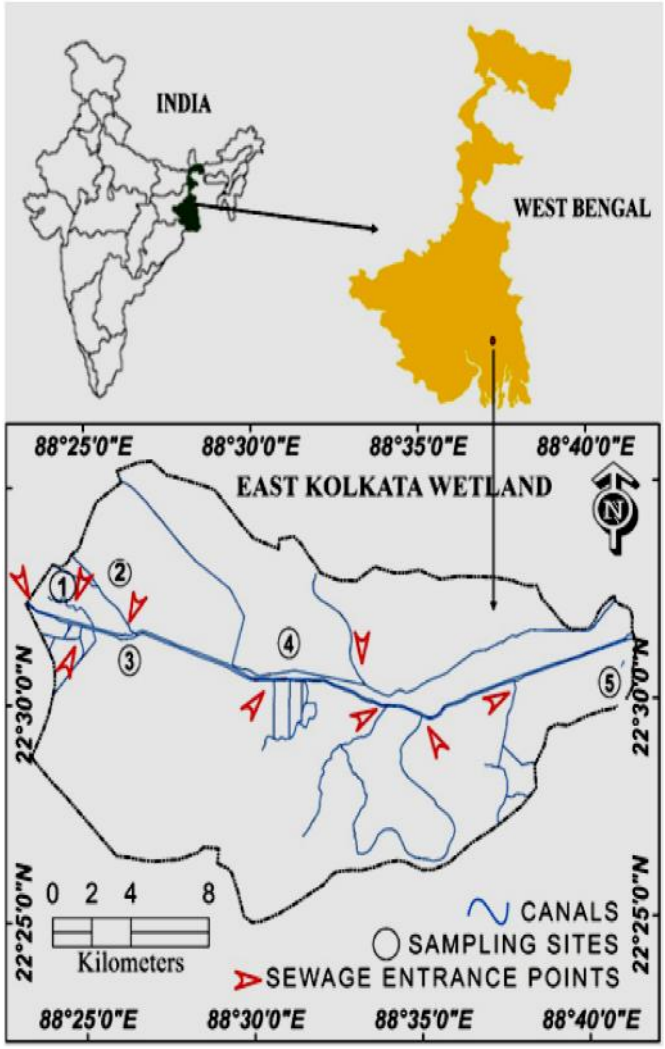

Fig. 1. Study sites and wastewater input map of EKW (India & West Bengal maps are not in scale)

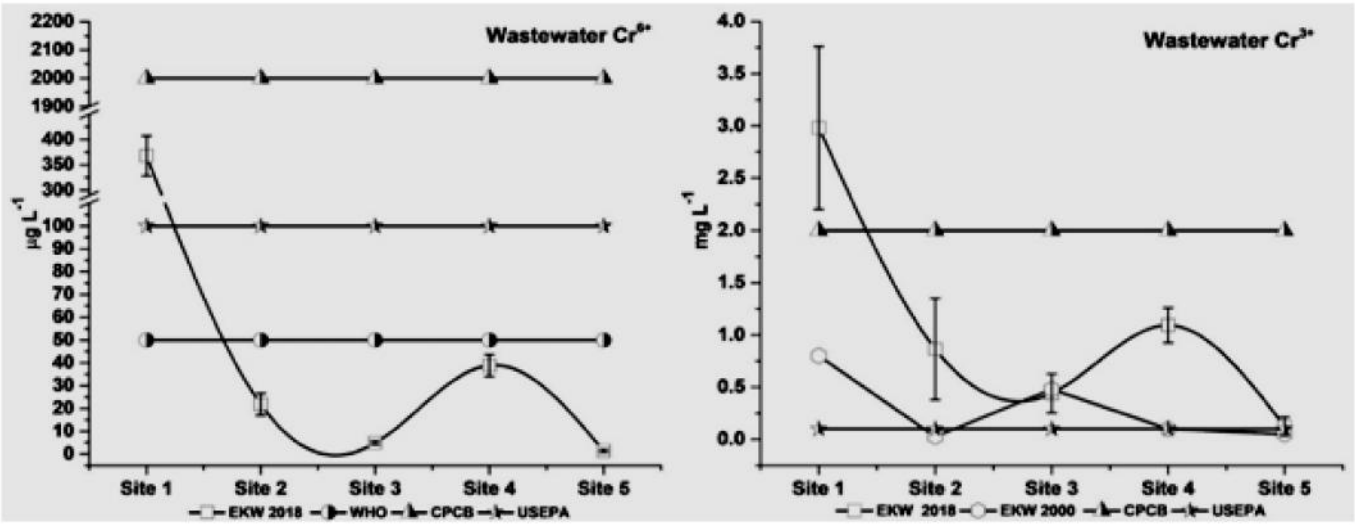

Fig. 2. Comparison of present Cr^{6+} and Cr^{3+} concentration (EKW 2018) in EKW wastewater with Chattopadhyay et al. (2000; EKW 2000), CPCB public sewers standard and WHO (2008), USEPA (2011) drinking water standard

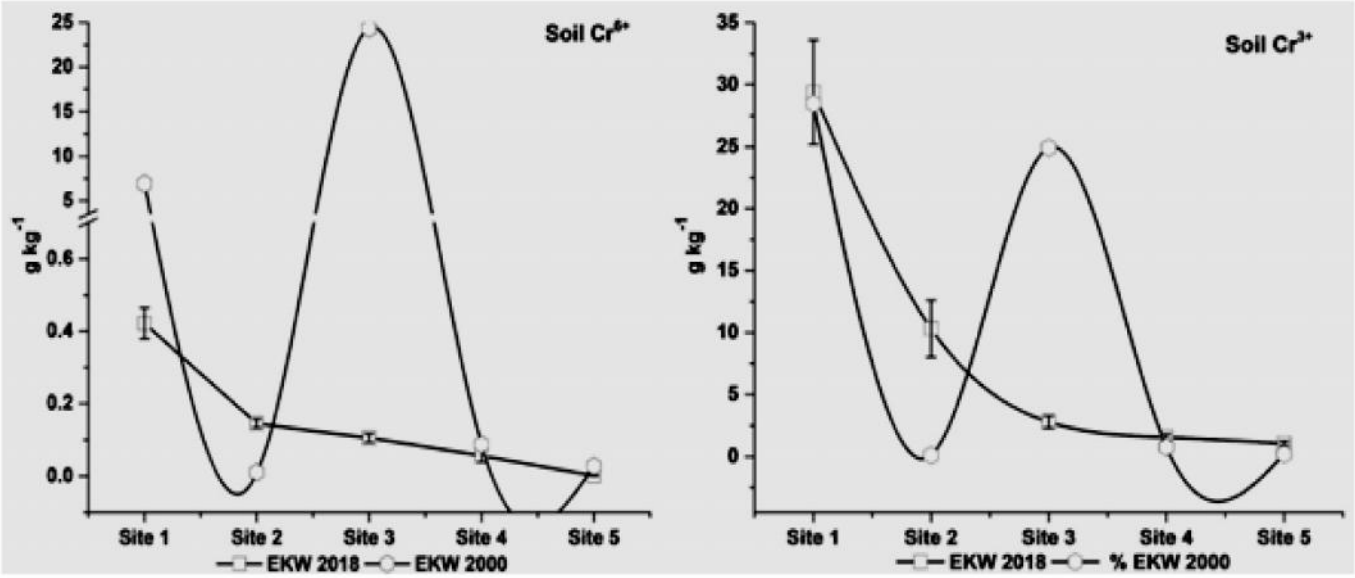

Fig. 3. Comparison of present Cr^{6+} and Cr^{3+} concentration (EKW 2018) in EKW soil with Chattopadhyay et al. (2000; EKW 2000)

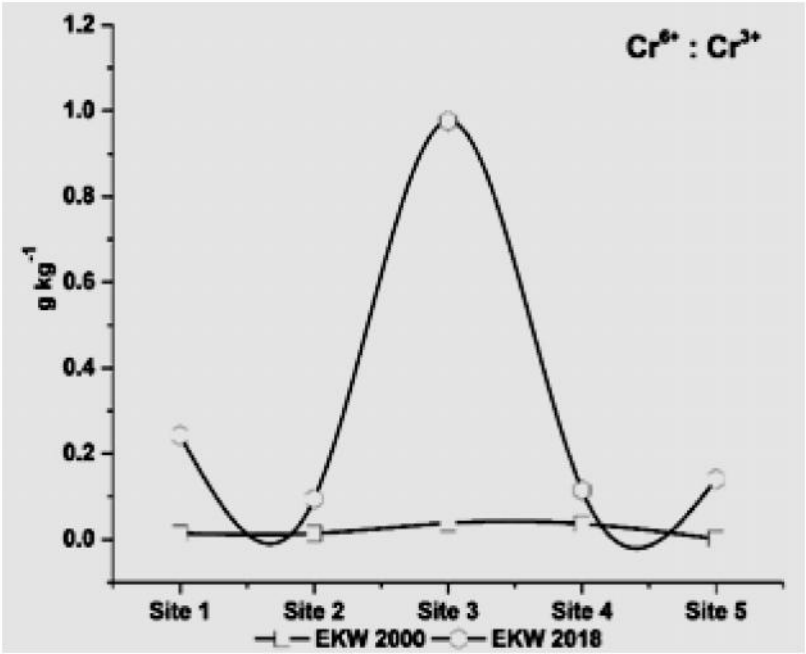

Fig. 4. Comparison of present Cr^{6+}: Cr^{3+} concentration ratio (EKW 2018) in EKW soil with Chattopadhyay et al. (2000; EKW 2000)

LESSON ON LEATHER GOODS – Part X

Shome Nath Ganguly
Former Principal of Karnataka Institute of Leather Technology

(The purpose of this article is to advise the students as well as artisans engaged in leather goods industry.

Shri Puranjan Mazumder of FREYA helped me to prepare this article)

SHOPPING BAGS

The shopper bag has one simple handle. It can be various shapes and simple construction. It is a large and an open top to carry anything. It is openly used for shopping. This type of bag is made with various materials for economical purposes. Beside leather Jute, Plastic, Canvas etc. are used for manufacturing shopping bag. But leather shopper bag has a huge demand in the international market. India is exporting huge quantity of leather shopping bag mainly from Kolkata. Very simple construction with open front or sometime closes it with Zipper.



The bag is used mainly for shopping purposes. These bags are medium-sized hand bags, typically for carrying non-grocery items around 10–20 liters volume wise. Though much larger versions is also exist in the market. These bags are often used by grocery shoppers to carry home their purchases. It can be single-use (disposable), used for other purposes like storage, Can liners, etc. or designed as reusable shopping bags.

In many European Union countries, plastic shopping bags are free and common into the 21st century, but their use is becoming less widespread, partly due to environmental legislation which has led retailers to charge for single-use plastic shopping bags. Ireland, for example, imposed a dedicated plastic bag tax, thus forcing retailers offering plastic bags to charge for them.

Reusable shopping bags are increasingly used in E.U. country where use of single-use plastic shopping bags is in decline. Reusable bags are often made from jute cloth, also known as burlap in the U.S., but sometimes they are also made from plastic. However these reusable plastic bags are sturdier than single-use plastic shopping bags. In U.S. reusable bags are used as a fashion statement or for advertising.

In the United States and Canada, single-use plastic shopping bags are common and often free with a purchase. Some retailers, such as department stores, are more likely to provide paper bags to shoppers, but supermarkets and grocery stores tend to favour plastic shopping bags. People are encouraged to have reusable shopping bags whenever possible, and in some municipalities, they must pay a government-mandated fee if they wish to utilize plastic shopping bags.

DIPP CLEARS UPGRADE OF TN EFFLUENT TREATMENT PLANTS

New Delhi, Aug 22 (PTI) : The government has approved Rs. 221.10 crore for upgrading five common effluent treatment plants for the leather industry in Tamil Nadu, according to the commerce ministry.

The Department of Induatrial Policy and Promotion, an arm of the Commerce Ministry, said it has also cleared up-gradation of seven Footwear Design and Development Institute (FDDI) centres into Centres for Excellence at a cost of Rs.129.62 crore.

"@DIPPGOI approves Rs. 221.10 crores for upgrading 5 Common Effluent Treatment Plants (CETPs) for leather industry in Tamil Nadu under Indian Footwear Leather & Accessories Development Programme," the department tweeted.

As part of the proposal to upgrade FDDI centres, the DIPP approved upgrading of FDDI Jodhpur campus into Centre for Excellence (COE) for high performance / specialized footwear products and start ups at the cost of Rs. 14.82 crore.

It also gave the nod to upgrading of FDDI Chennai and Hyderabad campus into Centre for Excellence for design development and fabric interface for leather products and accessories at the cost of Rs. 33.06 crore, among proposals related to other campuses like Kolkata, Rohtak and Noida.

INDIAN INTERNATIONAL TRADE FAIR TO BE HELD ON SMALL SCALE THIS YEAR : ITPO

New Delhi, Aug 25 (KNN) : Owing to space constraints, this year the India International Trade Fair (IITF) will be held on a smaller scale as redevelopment work is going on at Pragati Maidan.

According to a media report, India Trade Promotion Organization (ITPO) Executive Director, Deepak Kumar said, "Yes, the IITF will be held but the scale will be only 30% of the usual. Last year also we had curtailed, that was almost 50%".

The IITF will be held from November 14-27, at Pragati Maidan. Because of the space constraints priority will be given to artisans, craftsmen and states.

The ITPO is the nodal agency under the administrative control of the Commerce Ministry entrusted with the redevelopment of Pragati Maidan. (KNN)

CHINESE FOOTWEAR INDUSTRY GENERATES 123 BILLION US DOLLAR

The China Leather Industry Association revealed that, last year, footwear manufacturers generated sales over 120 billion US dollars. This is an increase of 4.4% compared to 2016.

The same source indicates that exports of footwear reached 9.6 billion pairs with a combined value of 45.6 billion US dollars, indicating an increase compared to the previous year of 3.7% in volume and of 1.7% in value. This resulted in an average price per pair of 4.75 US dollars.
Exports of leather footwear reached 680 million pairs and generated revenue of 9.3 billion US dollars, resulting in a declines on year of 1.2% and 3.4% respectively (average price per pair of 13.68 US dollars). According to the same source, China imported 139 million pairs of shoes in 2017, with a value of 3.2 billion US dollars. These figures show an increase in volume of 23.8% and of 18% in value compared to 2016.

(Source : World Footwear)

AFTER TEXTILES SECTOR, KANPUR'S LEATHER UNITS TURNING SICK

The industrial town of Kanpur is still known as the 'Manchester of the East' although most textiles mills here have downed shutters.

Now, Kanpur's other well known industry – leather – is also starting at the possibility of turning sick. Environmental issues coupled with raw hide bottlenecks over the past decades have pushed the leather industry, which provides direct and indirect livelihood to a million people, to the brink.

The tanneries, which used to run at peak processing capacity of almost 15,000 hides a day, operates at half capacity in the traditional Jajmau leather cluster due to continuous sickness.

Some leather goods manufacturers have even started importing finished leather from other countries, including Brazil, Pakistan and Bangladesh, to maintain their supply chain and hedge against occasional shutdown of tanneries.

Small Tanners' Association member Nayyar Jamal told Business Standard the local tanneries were facing a bleak future as there was still no concrete action plan of the government to keep the industry afloat as it transitions to a more eco-friendly platform. These industries battle forced closures during events like Kumbh Mela in Allahabad and due to the National Green Tribunal (NGT) orders.

He said although tanneries have been advised to shift to the proposed new leather cluster in Ramaipur, where a much bigger

effluent treatment plant would be set up, the new facility remained a non-starter.

"The proposed leather cluster in Ramaipur is not ready and we are expected to shift from Jajmau. It is for the government to set up the effluent treatment plant and we are ready to pay the user charges, which we continue to pay. If the Jajmau treatment plant failed to meet the tougher environmental norms, why are we made to suffer," he noted.

Levies on processing had also been increased from Rs. 5.70 to Rs. 20.35 per raw hide.

A large number of tanneries closed down following the NGT order to curb pollution. The remaining tanneries have been asked to shift to Ramipur, where a modern treatment plant is proposed at an investment of Rs. 5.54 billion. Currently, about 250 small and big tanneries operate in Jajmau, while more than 130 had already shut down. The existing tanneries discharge about 6.7 million litres per day (MLD) of effluents.

Kanpur leather cluster, which also includes the nearby Unnao district, has estimated annual sales of Rs. 120 billion, including Rs. 60 billion worth of exports to the Gulf, Europe, China and Iran, among others. UP comprises three major leather industry hubs viz. Kanpur-Unnao, Agra and Noida. Of the Rs. 200 billion (annual) leather industry of UP, about 50 per cent is accounted for by the export market. The state accounts for almost a third of India's annual leather trade and exports.

UP Leather Industries Association member Taj Alam lamented that Kanpur's leather industry was fast losing it's sheen as a reliable supplier owing to frequent supply crunch and government policies that reek of unfavourable policy stance.

"The importers have the ready option to procure from Pakistan, Bangladesh, Vietnam, China and Brazil where there are no supply issues regarding cattle hide,' he said. He said once an importer decides to source elsewhere, the whole import basket would suffer as he would question the 'Made in india' theme of the government.

(Source : Business Standard, New Delhi, 18/08/2018)

CLE eyes doubling leather exports to $10 billion in 6 years

Submits detailed plan to Commerce Minister Suresh Prabhu

The Council for Leather Exports (CLE) has set an ambition target to achieve exports of $10 billion by 2024-25 from the present $5.73 billion. This comes at a time when severe competition from countries such as China, Vietnam and Bangladesh is hurting the industry, which employs 4.42 million people, of whom 30 per cent are women.

The Council has chalked out a detailed action plan – Strategy for Growth of Leather Sector for next seven years to regain the sector's lost glory (India's leather exports touched a peak of $6.49 billion in 2014-15).

Report submitted

The report, a copy of which is available with BusinessLine, was submitted to Union Minister for Commerce and Industry Suresh Prabhu at a function organized by CLE in the city of Saturday.

India's leather sector produces 2.5 million sq ft of leather and accounts for 13 per cent of global leather production; manufacturers products worth $18 billion (over 90 per cent consumed locally) and is world's second largest producer of footwear and leather garments after China, and fifth largest exporter of leather goods and accessories. While leather exports from China declined by about 11 per cent in 2016-17, exports from Vietnam increased by nearly 46 per cent.

Govt support sought

This reflects a shift in capacity from China to Vietnam where factories have come up to meet huge volume requirements of markets like the US.

"This trend is affecting us and we need to scale up quickly," said CLE Chairman Mukhtarul Amin at the function.

"We need government support in getting land at cheaper rates for mega units and favorable labour laws keeping in view the seasonal nature of the industry, and availability of finance at lower interest rates."

The decline in exports for three successive years was due to lower intake in China, Vietnam, Italy and Korea – that totally accounts for 65 per cent of India's exports, said the Council, which focuses on export promotion activities and development of the Indian leather industry.

The industry was unable to export finished leathers with light/pastel shades that are in demand global markets as leathers do not qualify under present finished leather norms. The Council, in association with Central Leather Research Institute, is firming up a draft revised finished leather norms for consideration of the Department of Commerce. Garments with fur lining could not be exported due to ban on import of fox mink, chinchilla fur skins and reptile fur skins since January 2017.

Lower market penetration in segments like long and waist coats, children garments and pants/shorts also led to decline exports.

Recession in the European market, combined with competition from China, Bangladesh, Vietnam, Romania and Poland, caused stagnation in exports to the European Union. There is a lower penetration in the US market in the absence of huge volume production.

India's exports to the US grew to $847 million in 2017-18 from $526 million in 2012-13, but this growth is far lower than that posted by China or Vietnam.

Labour law

Favorable labour law is required to put up large-scale factories. India should adopt the models prevalent in countries such as China, Vietnam and Bangladesh. Vietnam offers five year tax holiday for 100 per cent FDI and joint venture units while in Bangladesh land is available at cheap cost for new units and 15 per cent cash incentive is offered for exports, the report said.

The Council's action plan includes enhancing production under Make in India, enhance exports of ladies, children and non-leather footwear and fur garments/waist coast and enhance share in traditional markets and penetrate new markets.

(Source : Business Line, New Delhi, 07/08/2018)

RS DEPRECIATION NOT ALWAYS LEADS TO EXPORT GROWTH EEPC

KOLKATA : Contrary to popular belief that rupee depreciation help exporters, currency volatility not always brings benefits for the fraternity, EEPC India said Monday.
"Our view has been that it is a stable currency that helps exporters, providing them with predictability of dealing with buyers. Any fluctuation and volatility on either side does not help," EEPC India chairman Ravi Sehgal said in a release.

Engineering Export Promotion Council of India (EEPC) said the country's engineering export growth shrunk to single digit at 9.4 per cent in July, from sharp increases in the previous few months even as the rupee was depreciating against the US dollar during the month. It was a demonstration that a stronger dollar is not the only growth driver and does not always lead to exports momentum, EEPC India said in an internal study recently.

"Rupee depreciated more in July (6.56 per cent) as compared to June (5.19 per cent). But did not exports grow at a higher rate and was there a currency depreciation advantage ? No, exports in July this year expanded at a lesser pace of 9.37 per cent than 14.17 per cent in June. The dollar appreciation, conversely, is also making the raw material exports expensive," EEPC officials said.

The rupee strengthened by 23 paise in early trade Monday to 70.77 against the US dollar.EEPC officials said the key lies in improving the domestic efficiency levels so that the cost of production is brought down.

Engineering exports had grown by 18.92 per cent in April, 2018, 14.59 per cent in May, 14.17 per cent in June and 9.37 per cent in July, a release said.

Engineering Export Promotion Council of India (EEPC) pointed out that the best thing in the interest of exporters is a stable currency. In any case, the present depreciation of rupee should get a contextual perspective that it is not the Indian currency alone which has lost ground against the US dollar.

(Source : Millenium Post, New Delhi, 04/09/2018)

AMERICAN-CHINESE TRADE WAR CAN MAKE INDIAN PRODUCTS COMPETITIVE

With the US imposing additional 25 per cent duty on imports worth $34 billion from China, certain Indian products may become more competitive, CII said on Sunday.

An analysis by the industry chamber revealed that India should focus on the US market for items in the categories of machinery, electrical equipment, vehicles and transport parts, chemicals, plastics and rubber products.

"India can focus on numerous goods for expanding its exports to the US and China markets following the hike in duties by both countries on imports from each other," CII said.

Top exports from India to the US which are covered in the list of items for which tariffs have been hiked include pumps, parts of military aircraft, parts for electrodiagnostic apparatus, passenger vehicles of 1500-3000 cc, valve bodies and parts of taps, said the chamber.

Exports of these items stood at over $50 million in 2017, according to CII, and can be increased with concerned efforts. Countries such as Vietnam, Indonesia, Thailand and Malaysia have increased their exports of these products to the US in recent years, the chamber noted.

Based on India's current exports to the US in these categories, products such as intermediate parts for the defence and

aerospace sector, vehicles and auto parts, engineering goods, etc. have a higher potential for export, it said.

"Sectors like apparel and textiles, footwear, toys and games and cell phone manufacturing are becoming competitive industries in India and need to be encouraged," CII said.

The chamber suggested that the trade dialogue with the Us should be strategized taking into account India's competitive advantage in these products.

Moreover, foreign direct investments from the US should be encouraged by boosting confidence of US firms in India's business climate, said CII, adding that this might necessitate addressing their concerns regarding non-tariff barriers in India for better long term outcomes.

In the domestic industry, it stated that it is important for India to enhance productivity while adding technology to its domestic production in the identified products.

CII examined 818 product lines where the US has raised tariffs for imports from China between 2012 and 2017, China's exports to the US have moved up the value chain with accelerated growth in high-technology items such as telecommunications equipment, automotive, cell phones, etc.

(Source : Newsjijj, 05/08/2018)

PRABHU : PREPARING STRATEGY TO PROMOTE FOOTWEAR INDUSTRY

Commerce and Industry Ministry is working with the footwear and allied sector industries to formulate a comprehensive strategy to promote exports and manufacturing in this labour intensive segment, Union Minister Suresh Prabhu said on Thursday.

He said the sector held huge potential to create jobs and boost the country's overall export. "We are working with the industry to prepare a strategic vision for the footwear and allied sector industries. Suggestions made by the industry would get all the support from my ministry," he said here.

The strategy could include recommendations on issues such as availability of raw material, skilled manpower, financing and environmental issues, and ways to link the sector to global value chains. The Commerce and Industry Minister was speaking at the inauguration of Indian International Footwear Fair.

Prabhu asked the industry players to make India a global manufacturing hub for the footwear sector. "Set up clusters in 4-5 states. We will engage with states to provide land and other support," he said, adding that the demand for footwear was going to multiply with the increasing population and income levels.

The market size of the Industry is about Rs. 50,000 crore, which is expected to touch Rs. 1 lakh crore in the next five years, according to industry estimates. Exports of footwear (both leather and synthetic) stood at around USD 2.5 billion per year. The sector employs about 10 lakh people.

Last December, the government approved Rs. 2,600 crore package for employment generation and promoting exports in the leather and footwear sectors.

(Source : Pioneer, 03/08/2018)

LEATHER INDUSTRY IN BANGLADESH

According to Leather goods and footwear manufacturers and exporters association of Bangladesh, the first eight months of the year saw a decline in exports to the Leather and footwear industry.

For Bangladesh the leather industry is an important sector the second largest sector of gain as far export. The export earnings number record $784.97 mn in the year 2017-18, against $827.62 mn in the same period 2016-17 for a face of 5%.

Leather Exports reached $126 mn in the first six month of the current fiscal year (July 2017-Feb 2018), a decline of 23% compared to the same period of the previous year and exports of leather goods amounted to $274 mn, down 3%. Exports of leather shoes, on the other hand, increased by 7% in the same period reaching $394 million.

(Source : Indian Leather, May-2018)

The Landmark First year of GST - A Short Trial Balance

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Abstract

The historic and transformational Goods and Services Tax (GST) completes one eventful year on 1st week of July' 2018 !

One of the most significant reforms in the field of indirect taxes in India, the landmark GST was introduced on 1st of July 2017. Its objective was to harmonize the tax regime of the country through the integration of most central and state indirect taxes and to eliminate cascading effects of taxation.

The GST ushered in a single tax system in the country, replacing 17 indirect taxes as well as a complicated tax structure in the country. The idea was 'A unified common tax is simple to administer and also benefits consumers by lowering the overall tax burden'. The GST was unique in that it involved complete consensus between Union, state and Union Territory Governments, a tough act in an active democracy especially as state governments had to cede tax powers to the GST Council.

The implementation of such a historic and transformational reform was not easy. Also a lot of confusions were there to implement in all sectors of society. But Government was determined to make it a success. Feedback from industry across sectors indicates that the GST process has stabilized, demonstrating an exemplary speed and manner in introduction as compared to other countries. Although the direct taxpayers are unhappy with it's forceful implementation in their daily life. During the first few months, the primary challenge was to educate and spread awareness among people about the nature of the tax as well the different rates of the tax for different products. Government and industry coordinated well with strong channels of communication to address procedural teething issues.

The high technology-driven nature of the new tax regime had to be understood, especially by the small businesses. The initial implementation saw delayed filings and uncertainty regarding Input Tax Credits (ITC), including for exporters, but these were resolved partly.

As GST completes the first year of its rollout, it is expected that the major issues in its implementation may deftly tackled by the Government in a systematic manner. It is also seems that the success of the new regime is now well entrenched and may go on to bring significant benefits for the economy.

GST – A Few Analysis and Opinions

GST has brought in 'one nation one tax' system, but its effect on various industries is slightly different. The first level of differentiation will come in depending on whether the industry deals with manufacturing, distributing and retailing or is providing a service.

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Impact of GST on Manufacturers, Distributor, and Retailers

GST is a boost competitiveness and performance in India's manufacturing sector. Declining exports and high infrastructure spending are just some of the concerns of this sector. Multiple indirect taxes had also increased the administrative costs for manufacturers and distributors and with GST in place, the compliance burden has eased and this sector will grow more strongly.

But due to GST business which was not under the tax bracket previously will now have to register. This will lead to lesser tax evasion.

Impact of GST on Service Providers

As of March 2014, there were 12, 76,861 service tax assessee in the country out of which only the top 50 paid more than 50% of the tax collected nationwide. Most of the tax burden is borne by domains such as IT services, telecommunication services, the Insurance industry, business support services, Banking and Financial services, etc. These pan-India businesses already work in a unified market and will see compliance burden becoming lesser. But they will have to separately register every place of business in each state.

Sector-wise Impact Analysis

Logistics

In a vast country like India, the logistics sector forms the backbone of the economy. We can fairly assume that a well organized and mature logistics industry has the potential to leapfrog the "Make In India" initiative of the Government of India to its desired position.

E-commerce

The e-commerce sector in India has been growing by leaps and bounds. In many ways, GST will help the e-com sector's continued growth but the long-term effects will be particularly interesting because the GST law specifically proposes a Tax Collection at Source (TCS) mechanism, which e-com companies are not too happy with. The current rate of TCS is at 1%.

Pharma

On the whole, GST is benefiting the pharma and healthcare industries. It will create a level playing field for generic drug makers, boost medical tourism and simplify the tax structure. If there is any concern whatsoever, then it relates to the pricing structure (as per latest news). The pharma sector is hoping for a tax respite as it will make affordable healthcare easier to access by all.

Telecommunications

In the telecom sector, prices will come down after GST. Manufacturers will save on costs through efficient management of inventory and by consolidating their warehouses. Handset manufacturers will find it easier to sell their equipment as GST has negated the need to set up state-specific entities, and transfer stocks. The will also save up on logistics costs.

Textile

The Indian textile industry provides employment to a large number of skilled and unskilled workers in the country. It contributes about 10% of the total annual export, and this value is likely to increase under GST. GST would affect the cotton value chain of the textile industry which is chosen by most small medium enterprises as it previously attracted zero central excise duty (under optional route).

Real Estate

The real estate sector is one of the most pivotal sectors of the Indian economy, playing an important role in employment generation in India. The impact of GST on the real estate sector cannot be fully assessed as it largely depends on the tax rates. However, the sector will see substantial benefits from GST implementation, as it has brought to the industry much-required transparency and accountability.

Agriculture

The agricultural sector is the largest contributing sector the overall Indian GDP. It covers around 16% of Indian GDP. One of the major issues faced by the agricultural sector is the transportation of agri-products across state lines all over India. GST will resolve the issue of transportation.

FMCG

The FMCG sector is experiencing significant savings in logistics and distribution costs as the GST has eliminated the need for multiple sales depots.

Freelancers

Freelancing in India is still a nascent industry and the rules and regulations for this chaotic industry are still up in the air. But

with GST, it will become much easier for freelancers to file their taxes as they can easily do it online. They are taxed as service providers, and the new tax structure has brought about coherence and accountability in this sector.

Automobiles

The automobile industry in India is a vast business producing a large number of cars annually, fueled mostly by the huge population of the country. Under the previous tax system, there were several taxes applicable to this sector like excise, VAT, sales tax, road tax, motor vehicle tax, registration duty which will be subsumed by GST.

Startups

With increased limits for registration, a DIY compliance model, tax credit on purchases, and a free flow of goods and services, the GST regime truly augurs well for the Indian startup scene. Previously, many Indian states had different VAT laws which were confusing for companies that have a pan-India presence, especially the e-com sector. All of this has changed under GST.

Has GST hit states growth ? Here's the truth

Most states' pre-GST tax growth was lower than the 14% guaranteed under GST regime. A cursory look at their past performance will reveal that most states had previously registered growth rates much lower than 14% from the taxes that later collapsed into GST.

It may appear that the goods and services tax (GST) hasn't given a big boost to states governments' tax revenue (or for that matter, the Centre's) so far, but there's little reason for them to complain. The constitutionally guaranteed compensation mechanism under GST ensures, in effect, a 14% annual growth in the states' revenue. A cursory look at their past performance will reveal that most states had previously registered growth rates much lower than 14% from the taxes that later collapsed into GST.

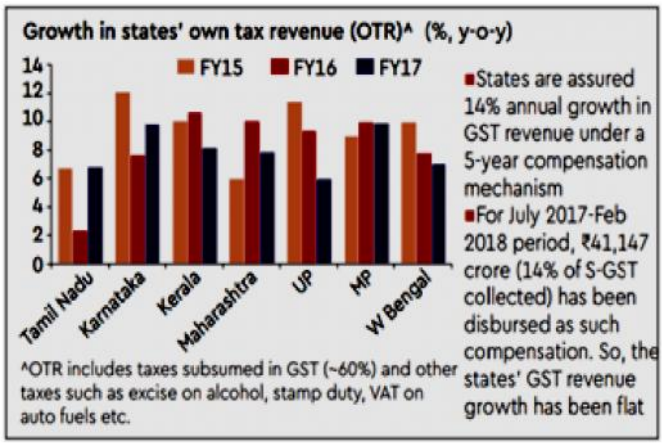
The chart shows how some states' own tax revenue (OTR) — a major component of which (roughly 60% in most cases) are levies like state VAT, entry tax, octroi, purchase tax, luxury tax etc that are now subsumed in the GST — grew in the three years prior to the launch of the new comprehensive indirect tax. OTR is a good proxy for GST and the two's growth rates are comparable.

Recently, several non-BJP ruled states including Kerala, Andhra Pradesh, Punjab and West Bengal blamed the 'shabby implementation' of the GST for their lower-than-expected tax collections and sought amendments to the terms of reference of the 15th Finance Commission to factor in the impact of GST on the states' revenues.

Sources had told FE that Tamil Nadu, Andhra Pradesh and West Bengal saw 20% 'shortfall' (gap between actual collections and what 14% annual growth over 2015-16 base would entail) in July 2017-February 2018 period. The shortfall was even higher at around 30% in case of Odisha and Madhya Pradesh, 40% for Bihar and Punjab and 50% for Himachal Pradesh.

Kerala finance minister Thomas Isaac recently bemoaned that the state's GST revenue growth is less than 10% as against an expected 20%. "The reason is a (properly designed) GST system is not in place," he said. But Kerala's OTR had grown an average of 9.65% only between FY15 and FY17.

The initial period of GST introduction saw several changes in rates, returns, time-lines etc and also the dilution / delayed introduction of anti evasion measures such as invoice matching, reverse charge etc. These could have, in part, led to lower collections in the initial phase. With the introduction of the e-way bill and other measures on the anvil, the GST revenues are expected to increase," MS Mani, partner, Deloitte India, said.



The GST revenue growth has been hobbled by the absence of a comprehensive return-filing system as the taxpayers continue to file summary return which was originally meant to be an interim measure. Besides, suspension of provisions like reverse charge mechanism for buying from unregistered dealers, tax collected/deducted at source (TCS/TDS) has left the system prone to evasion. The crucial mechanism of e-way bill — designed to plug revenue leakages in business-to-consumer transactions — was only implemented in April and its benefits will be clear from collections in May. Even the new simplified system of return-filing would take a year to be fully in place. Further, because of technical glitches and cumbersome compliance process, the tax department has been cautious in its enforcement actions.

Have the objectives of GST really been achieved?

The most significant reform in indirect taxes in India since Independence has been the Goods and Service Tax (GST), ushered in on July 1, 2017, after many a twist and turn over more than a decade. It is a historic achievement of Indian federalism, wherein the Centre, states and union territories joined hands on a common platform. There has been global appreciation for the reform, which provides a solid structure for the economy.

'One tax, one nation' was the motto, thereby subsuming all indirect taxes into GST. It is a single destination-based indirect tax levied on sale of goods and services. The GST is essentially a tax only on value-addition at each stage, ensuring thereby that the consumer will bear only the GST paid by the last dealer in the supply chain, with set-off benefits at all previous stages.
Indian GST has four rates — 5, 12, 18, and 28% — while most countries around the world have a single rate of GST. As per a World Bank Report, 49 countries use a single rate, 28 countries use two rates. India, Italy, Luxembourg, Pakistan and Ghana use four rates. The India Development Update, the bi-annual publication of World Bank, states that the GST rate of 28% is the second highest among 115 countries that have a GST (value-added tax, VAT) system.

In the course of implementation, a lot of hurdles came up. But these have been resolved quickly at least to some extent. The government is striving hard to simplify it. Though GST has reduced the complexity of indirect taxation in the country, the GST system itself appears to be the most complex one after China's in the Asia-Pacific region.

At every GST Council meeting, the common issues, including the tax rates and the procedural requirements, have been deliberated and reduced to a great extent. Introduction of the e-way bill with effect from April 1, is expected to smoothen the process. In July 2017, the portion of GST returns filed on time stood at 57.69%. That improved to 66.81% by December 2017 but dipped to 62.63% in March 2018.

The core purpose of bringing GST is uniformity of tax rates and structures, easy compliance, improved competitiveness and gains to manufacturers and exporters, removal of cascading taxes, thus paving the way for reduction in prices. For the government, it's simple and easy to administer, and allows it to better control leakage and ensures higher revenue efficiency.

As we approach a year since the introduction of GST, it is necessary to gauge how far its objectives have been achieved. Uniformity of taxes, removal of cascading tax and transparent system of taxes have been achieved to a great extent. But the core object of reduction in prices is yet to be achieved. Anti-profiteering rules have been provided; thereby the authority concerned can exercise power if reduction in taxes is not passed on to consumers.

Competitiveness in the global market, by virtue of GST, is still to be achieved — Consumer Price Index of March 2018 stood at 136.50, whereas it stood at 136.40 in March 2017. Industrial production is at a five-month low at 4.4% compared to 7% in February 2018, as per the Central Statistical Organisation. Mining is at 2.8% now compared to 10.1% last year. The experience on introduction of GST has been different in different countries. In countries such as Australia, Canada, Japan, China and Singapore, there was an increase in inflation post-GST implementation. In India, the inflation rate for March 2018 was 4.28%, down from 4.44% a year before. As per a HSBC report, inflation is set to rise to 5.1%. But GST may not be a significant threat in this regard as the CPI basket does not show it to be adversely impacting inflation. The Malaysian government is set to scrap its single-rate (6%) GST, introduced in 2015, on June

1, 2018, zero-rating it for three months before bringing in a sales and services tax (SST) in September. On course A Finance ministry statement said that the total GST revenue collected between August 2017 and March 2018 was Rs 7.19 lakh crore. These collections include Rs 1.19 lakh crore of central GST, Rs 1.72 lakh crore of state GST and Rs 3.66 lakh crore of Integrated GST. IGST collections include Rs 1.73 lakh crore tax on imports and Rs 62,021 crore of cess.

As there is stability and steady progress in GST collection, there is much scope for rationalization of rates, particularly for reducing the 28% items to the 18% rate. If petroleum products come under the purview of GST, there will be higher buoyancy in collections.

The pre-Budget Economic Survey predicted that India's GDP growth will accelerate from 6.75% this year to 7-7.5% in 2019. Therefore, buoyancy of tax collection would increase. It is not certain if the projected GDP includes the impact of GST on the economy. Some countries — Australia, Malaysia, Canada and Singapore —took a hit after introducing GST. In Singapore, GDP growth fell 3.3% from 10.2% to 6.9%. In India, in the second quarter after roll out of GST, GDP growth accelerated to 6.3% from from 5.7%.

Under the GST law, the Centre has to compensate the states for loss of revenue on account of GST. It has budgeted Rs 90,000 crore as compensation to states for 2018-19, rising 47% from Rs 61,300 crore for 2017-18. It accounts for 3.6% of the 2018-19 Union Budget. To meet the challenge of compensating the states, the cess collected on luxury vehicles will be used. About Rs 62,000 crore was collected through cess and an estimated Rs 41,000 crore paid in compensation to states till February 2018.

Conclusion

In a nutshell, the core objectives of the GST seem to be within sight.

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INVESTIGATIONS TO IMPROVE THR DETERMINATION OF THE HIDE SUBSTANCE IN LEATHER ANALYSIS*

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The current method of determining the hide substance in leather analysis by finding the total nitrogen according to the Kjeldahl method is falsified by the use in leather manufacture of syntans, resin tanning agents, and fixing agents. It is shown that determining the hide substance by the oxyproline method is unsuitable for this purpose. Instead it is proposed that the hide substance should be calculated from the amino nitrogen, which represents the difference between the total nitrogen and the non-amino nitrogen. Differentiation between the ammonicaal nitrogen and amide nitrogen constituting the non-amino nitrogen permits further conclusions regarding the use of syntans or resin tanning agents and fixing agents in the manufacture of the leather under investigation.

In the chemical analysis of leather determining the hide substance is of great importance because it enables one to find the amount of bound tanning agent and hence the tanning penetration value, that is to say the intensity of tannage[1]. For this purpose it is necessary in the first place to duduct from the weight of the leather under investigation the unbound tanning agents, fats, mineral substances, and water, so that the so-called leather substance, consisting of hide substance and bound tanning agents, remains. The bound tanning agent can be determined by indirect means only as the difference between the leather substance and the hide substance. Thus the value of this part of leather analysis depends on the accuracy with which the hide substance can be determined (it is not intended to deal here with the analytical accuracy of the determination of the loss of organic materials due to washing out, of the ash, of the fats, and of the water).

The hide substance—as will be familiar—is found by means of nitrogen determination according to the Kjeldahl method, which actually produces quite accurate results. Unfortunately, however, the nitrogen determined does not represent the hide substance alone, since a certain proportion of the nitrogen may originate from substances which enter and are deposited in the leather during the tannage and finishing, e.g. fixing agents and resin tanning agents. Thus, when calculated from the total nitrogen, the hide substance as a percentage is often too large. This fact is well-known in technical circles[1], where it is justifiably complained that chemical leather analysis provides only more or less vague information regarding the most interesting question from the point of view of tannage, that is to say about the quantity of bound tanning agent.

In this connection questions have repeatedly been asked concerning the actual extent of the falsification resulting from fixing agents, resin tanning agents, and other

substances. It has also been asked that other substances used in the leather industry likewise contain appreciable amounts of nitrogen that are capable of falsifying the hide substance determination. It should be stated at the outset that not only syntans but also natural tanning agents are capable of leading to what are, after all, clearly perceptible erros in the hide substance determination. In the case of natural tanning agents they are albuminous substances which are derived from the plant structure and are simultaneously leached out when the extracts are prepared. The possibilities of error in the conventional method of hide substance determination and the extent of the falsification concerned will be discussed in the second part of this study.

There is, however, one possibility of determining the true hide substance, that is to say by means of the amino acid oxyproline, which is characteristic of collagen and does not occur in other albumens. In 1950 Neumann and Logan described a method of determining hydroxyproline colorimetrically from a mixture of amino acids formed in the acid hydrolysis of collagen[2]. When the hydroxyproline determination became known attempts were made by tanning chemist to determine the hide substance in the leather on the basis of the oxyproline content[3]. Nevertheless, all the authors who have employed this method complain about its great lack of accuracy. In the first part of the present study we shall attempt—following a critical review of this method—to find out whether the errors of the conventional method of the hide substance determination in the leather can be avoided by converting the hydroxyproline content to hide substance.

Another way of determining the hide substance in the leather by means of a constitutent of the total nitrogen that is characteristic of collagen consists in determining the nitrogen of the amino groups of the hide substance and converting from this to hide substance. Dividing the total nitrogen into "amino nitrogen" and "non-amino nitrogen" has proved possible and it should be said in this connection that the nitrogen brought into the leather by syntans and other tanning auxiliaries belongs to the non-amino nitrogen. This subject is considered in the third part of this study.

1. Hide Substance determination by the oxyproline method

The basic steps in the oxyproline method are as follows :

(i) Oxidation of the hide or leather hydrolyzate with H_2O_2 and $CuSO_4$ in alkaline solution.

(ii) Removal of the H_2O_4 excess by shaking or heating.

(iii) Dyestuff formation with p-dimethylaminobenzaldehyde in the sulphuric acid zone at an elevated temperature.

(iv) When the maximal depth of colour has been reached the extinction is measured spectographically at 560 mμ. The measured extinction is

evaluated by means of a calibration curve which should be plotted in each case :

Since its invention the oxyproline method has been used very frequently to detect collagen and albumen mixtures. In countless publications on this subject mention is made of variations in the working conditions intended to improve the accuracy and the procedure. These variations are concerned with, for example, the concentration of the solutions employed, the temperature, the period of exposure etc. From the procedures described by Lollar[3], J. H. Bowes[4], and F. Hutterer and E. J. Singer[5], we have chosen for our purposes the procedure described by Bowes.

The two main questions which we attempted to anwer by means of our experiments are as follows :

(a) How reproducible is the method in the hands of an experienced laboratory assistant ?

(b) How do the hide substance values found by the oxyproline method compare with those found by the Kjeldahl method ?

It was revealed by about 500 individual determinations of the oxyproline content of limed and non-limed collagen, as well as of leathers prepared in a great variety of ways, on which, for part of the time, three analysis were employed, that a maximal scattering of the analysis valued of $\pm$ 10% must be anticipated. This scattering is inherent in the method itself, as fact that is already recognized from the considerable differences between the calibration curves, which have to be replotted each time. We found that the measure of agreement between the individual values improves to some extent when several hydroxyproline determinations of the same collagen hydrolyzate are carried out using the same calibration curve. After some practice we found an oxyproline content of 12.7% in the case of non limed collagen and of 12.95% in the case of limed collagen by finding the average values. The increase in the oxyproline content caused by liming is explained by the removal of non-collagenic hydroxyproline-free accompanying proteins in this operation. In the literature the oxyproline content of collagen and non-limed collagen is given as 12.83% and 13.34% respectively (Bowes[4]). The figures found by Lollar[3] for salt-preserved, non-limed hide collagen were 13.35, 12.6 and 12.95.

Our comparative investigations on the hide substance percentage in the leather (comparison between Kjeldahl nitrogen and oxyproline) were based on he above-mentioned hydroxyproline value of 12.95%. Naturally at least the same degree of scattering must be anticipated in the hydroxyproline determination of leather as in the analysis of untanned hide.

* A similar idea was recently put forward by the Italian tanning chemist Dr. A. Succo, proposed that the so-called van-Slyke nitrogen in the leather should be determined as a nitrogen quantity that is characteristic of the hide substance and largely identical with the amino nitrogen. A dctailed report on experimental details has not yet been published. However. it may presumably be said already that direct determination of the amino nitrogen by the vah-Slyke mrthod is experimentally more expensive and more difficult than indirect determination from the differnce between total nitrogen and non-amino nitrogen.

The question now is whether the oxyproline values of vegetable-tanned leather are influenced by the presence of vegetable or synthetic tanning agents. By carrying out hydrolysis 13 times on mixtures of limed hide substance with as much chestnut extract (in powder form) as would correspond to a tanning penetration value of 70 we arrived at a mean oxyproline content of 13.25%. This value is definitely even though slightly, higher than our collagen value of 12.95%. The same result was also obtained in the case of mixtures of limed hide substance with quebracho or Mimosa extract. In each case an increase an the oxyproline values was determined. This fact has also been recorded by J. H. Bowes[4]. Unfortunately we see no possibility of eliminating this error due to tanning agents.

An opposite influence on the oxyproline determination is exerted by tanning fixing agents. When we hydrolized non-fixed, dried chestnut leather mixed with hexamethylene tetramine or Fixative BH*) the oxyproline content of the chestnut leather fell from 7.19% to 5.71% and 5.96% respectively. The same results were also obtained when the fixing agents were added to limed hide. Details in this respect are contained in table 1.

TABLE 1. Comparison between the oxyproline values before and after addition of fixing agent :

(a) to chestnut leather

(b) and (c) to two different types of limed, acetone-dried hide.

The fixing agent was added to the leather or hide powder immediately before hydrolysis.

(*a*)	*Chestnut leather* %	*Chestnut leather + Hexamethylene tetramine* %	*Chestnut leather + Fixative BH* %
	6.8	5.4	5.8
	7.0	5.1	5.82
	7.65	5.6	5.7
	7.20	6.75	6.5
mean Value	7.19	5.71	5.96

(*b*)	*Limed hide* %	*Limed hide + hexamethylene tetramine* %	*Limed hide + Derugan L* %	*Lime hide + Fixative BH* %
	12.95	11.0	12.1	11.9
	12.95	11.2	11.5	
mean value	12.95	11.1	11.8	

(c)	*limed hide* %	*Limed hide + hexamethylene tetramine* %	*limed hide + Derugan L* %	*lime hide + Fixative BH* %
	12.95	10.7	11.9	12.1
	12.95	11.0	11.9	11.9
	12.95	10.7	11.9	12.1
mean		10.7	11.9	12.1
value	12.95	10.8	11.9	12.0

The inefficiency of hide substance determination on the basis of the hydroxyproline content is most clearly shown by a comparison with the values obtained by the Kjeldahl method. The relevant comparative tests were carried out on synthetically tanned and on fixed, vegetable-tanned leathers.

The first column of table 2 shows the Kjeldahl values of the specimens as percentages, calculated on dry hide substance. The Kjeldahl determination was carried out on absolutely dry material. The second column contains the hide substance values obtained therefrom by multiplying by 5.62. The third column contains the oxyproline values, while the fourth column contains the hide substance values obtained therefrom by multyplying by 7.74. The factor 7.74 was calculated from the oxyproline percentage of 12.95, which we laid down as a basis for our work.

If the values in the second and fourth columns of table 2 are compared, it will be noticed that there is no appreciable difference in the case of mimosa leather. The same applied to quebracho leather and leather tanned with Tanigan Extra Q. With Tanigan Extra A leather the Kjeldahl hide substance value is somewhat higher; with chestnut leather the value determined by the oxyproline method is higher. The difference between the hide substance values is relatively large in the case of chestnut leather fixed with hexamethylene tetramine. Understandably, the value found by the Kjeldahl method is considerably higher owing to the large amide nitrogen content. Furthermore, as has been shown, a considerably lower hydroxyproline value was found in the presence of fixing agents. In the case of chestnut leather with Derugan L** the two hide substance values differ in the opposite way. When chestnut leather is fixed with Fixative BH the Kjeldahl method again gives a higher hide substance value.

* Farbenfabriken Bayer AG, Eeverkusen.
** Schill and Seilachar, Stuttgart.

TABLE 2 : Comparison between variously tanned leathers in regard to their hide substance content as determined by the oxyproline method and via the Kjeldahl nitrogen, respectively.

Type of leather	*Kjeldahl nitrogen in % of absolutely dry material.*	*Hide substance from Kjeldahl nitrogen.*	*Percent Oxyproline*	*Percent oxyproline factor 7.74 = hide substance from hydroxyproline nitrogen.*
	1	2	3	4
Lime hide	17.8	100.0	12.95	100
Non-limed hide	17.2	96.5	12.7	98.2
Mimosa leather	10.04	56.4	7.23 (from 22 individual values)	56
Quebracho leather	9.9	55.6	7.39	57
Tanigan Extra Q leather	11.29	63.4	8.26	64
Tanigan Extra A leather	12.2	68.0	8.42	65
Chestnut leather	10.55	59.3	8.03	62
Chestnut leather fixed with hexamethylene tetramine	11.8	66.3	7.73	59.8
Chestnut leather fixed with Derugan L	10.37	58.2	7.85	60.7
Chestnut leather fixed with BH	11.48	64.4	8.03	62.1

Considered as a whole the picture is highly unsatisfactory. Hide substance determination via oxyproline can evidently not be expected to reduce the errors caused by nitrogen-containing leather constituents that are extraneous to the hide the oxyprolin substance when the latter is determined via Kjeldahl nitrogen. On the one hand the oxyproline determination method is in itself highly inaccurate ; on the other hand it is directly falsified when vegetable tanning agents and fixing agents are cohydrolzed.

2. Hide substance determination via amino nitrogen.

Hide substance determination via amino nitrogen is based on two analytical operations, namely,

(i) the familiar total nitrogen determination according to Kjeldahl, in which the entire nitrogen present in the leather is converted into ammonia under the action of concentrated sulphuric acid and a catalyst, and

(ii) Hydrolytic decomposition of the leather in dilute acid, as a result of which the non-amino nitrogen is converted into NH_3.

In both cases the ammonia obtained by the processes of decomposition can be determined quantitatively in alkaline solution. The difference between total nitrogen and non-amino nitrogen represents the amino nitrogen.

The amino nitrogen should be converted to hide substance by means of a factor determined experimentally on a normally limed pelt. The nitrogen constituent of the pelt, which should be termed non-amino nitrogen, is known in the albumen literature as "amide nitrogen".

These are amide groups based on the carboxyl groups situated on the side chains of the collagen amino acids, of glutamic acid, and of asparagic acid. Table 3 contains the figures necessary to enable the new conversion factor to be calculated.

TABLE 3. Analysis of limed hide (adhydrous)

% total nitrogen (Kjeldahl)	17.80
% non-amino nitrogen (Amide nitrogen)	0.63
% amino nitrogen	17.17

It is a familiar fact that the factor 5.62 ($17.8 \times 5.62 = 100$) is employed to convert from the percentage of total nitrogen to hide substance.

The conversion factor for the hide substance determination based on the percentage of amino nitrogen is obtained from $100/17.17 = 5.82$. In practical leather analysis both methods of nitrogen determination (Kjeldahl and non-amino nitrogen) are based on air dry leather specimens and simultaneously determine the solids content of an aliquot portion of the leather specimens. From these three figures the desired hide substance value is then calculated according to the following formula :

$$\% \text{ hide substance} = \frac{(\% \text{ Kjeldahl N} = \% \text{ non-amino N})\ 5.82 \times 100}{\% \text{ solids}}$$

Table 4 contains the hide substance values of various leathers obtained by converting the amino nitrogen figures. It also contains the hide substance values of these leathers obtained by the conventional method (conversion of Kjeldahl nitrogen to hide substance).

A comparison between the improved hide substance values and the values obtained by the conventional method reveals that the improved hide substance values are fundamentally smaller and, furthermore, that they have been individually reduced by exactly the nitrogen portion present in the leather concerned and not belonging to hide collagen. For example, in the case of the chestnut leather fixed with hexamethylene tetramine it can be recognized that the proportion of hide substance has been considerably reduced from 66.3—60.5. A similar reduction is observed in the leathers fixed with Fixative BH, i.e. from 64.4 to 58.4 in the case of fixation with Derugan L the proportion is smaller.

TABLE 4. Comparison between the conventional and improved method

Type of Leather	*Per cent Kjeldahl nitrogen*	*Per cent non amino nitrogen*	*Dry substance leather*	*Per cent hide substance calculated on* $(a-b)\times 5.82\times 100$	*Per cent hide substance calculated on* $a\times 5.62\times 100$
	a	*b*	*c*		
	Calculated on air-dry leather				
Limed hide	15.22	0.54	86.5	100	100
Non-limed hide	14.40	0.53	82	96.5	96.5
Mimosa leather	8.23	0.35	82	55.7	56.4
Quebracho leather	8.15	0.28	82	55.6	55.6
Tanigan Extra Q	9.79	1.01	86	58.8	63.4
Tanigan Extra A	10.27	0.60	84	61.4	8.0
Chestnut leather	8.32	0.34	78.5	58.8	69.3
Chestnut leather fixed with hexamethylene tetramine	9.29	1.12	78	60.5	66.3
Chestnut leather fixed with Derugan L	8.90	0.51	86	56.7	58.2
Chestnut leather fixed with BH	9.88	1.24	86	58.4	64.4

There is also a reduction of the hide substance in the case of the leathers tanned with syntans, e.g. from 63.4 to 58.8% in the case of Tanigan Extra Q and from 68 to 61.4% in the case of Tanigan Extra A.

It will be realized that this method of correction only gives hide substance values which correspond more closely to the actual facts when the falsifying nitrgoen is amide nitrogen or ammoniacal nitrogen. When the fixation is carried out with the glue or fixing agents containing amino nitrogen, correction according to this method fails to produce the correct value.

3. Differentiation between ammoniacal nitrogen and amide nitrogen in the non-amino nitrogen.

In as far as it is deposited in the leather by tanning agents and auxiliaries, e. g. fixing agents, the non-amino nitrogen can be further differentiated, as a result of which certain information regarding the nature of the nitrogen-containing tanning agents and auxiliaries in the leather can be obtained. It should be explained that if the leather contains ammonium salts, fixing agents, or syntans that have been neutralized with ammonia, the nitrogen of these ammonium salts can be simply determined in the following manner : after being cut up into small pieces the leather is soaked in water, the water is rendered slightly alkaline, and the ammonia thus released is distilled off in a vacuum and collected in acid. As indicated by Table 5, syntans may contain considerable amounts of "free ammonical nitrogen." The remaining "non-amino nitrogen" will be summarily termed "amide nitrogen". This is supplied by tanning fixing agents, resin tanning agents, and also some types of syntan, but always—a fact to which reference has already been made in the preceding section—as part of the hide substance itself. The ammonical, amide, and and amino nitrogen values of 3 synthetic and 3 natural tanning agents are shown in table 5. To improve the characterization of the additional nitrogen carriers in the leather it is advisable to express the ammonical nitrogen and amide nitrogen values in per cent of amino nitrogen as the main proportion of the nitrogen in the leather characteristic of the hide substance.

(a) Nitrogen content of tanning agents.

It has long been known that there are nitrogen-containing impurities in natural tanning extracts[6]. As compared with vegetable tanning agents, the syntans contain considerably more nitrgoen.

TABLE 5 : Nitrogen contents of some synthetic and natural tanning agents.

Tanning agent	*Nitrogen in mg/g*		*Substance amino N (=total N—non-amino N)*	*Per cent ammonical Calculated on amino N*	*Per cent amide N, Calculated on amino N*	*Sum of 4+5*
	Ammonical N	*Amide N (=non-amino N —NH_3N)*				
Column	1	2	3	4	5	6
Tanigan Extra A	7.9	0	0.15			
Tanigan Extra Q	31.5	0	0.6	almost pure ammonical nitrogen		
Tanigan Extra KN	30.0	0	0.4			
Mimosa	0.23	0.37	2.9	7.9	12.7	21
Chestnut	0.05	0.15	0.4	12.5	37.5	50
Quebracho	0.1	0.1	0.9	11.0	11.0	22

TABLE 6 : Nitrogen contents of leathers tanned with some synthetic or natural tanning agents. Nitrogen in mg./g dry substance.

Type of leather tanned with	*Ammonical N*	*Amide N (=non-amino N—NH_3N)*	*amino N (total N. non-amino N)*	*Per cent ammonical N*	*Per cent amide N calculated on amino N*	*Sum of 4+5*
Column	1	2	3	4	5	6
Untanned hide	0.015	6.0	171.8	0	3.5	3.5
Tanigan Extra KN	11.2	4.0	86.8	12.9	4.6	17.5
Tanigan Extra Q	14.6	3.6	81.6	17.9	4.4	23.2
Mimosa	0.02	3.2	76.5	0	4.2	4.2
Chestnut	0.02	3.1	75.9	0	4.1	4.1

This is indicated by table 5, in which we have listed the above mentioned nitrogen values for ammonical, amide and Kjeldahl nitrogen in the case of three syntans and three natural tanning agents.

It will be observed that the nitrogen of syntans, (e.g. Tanigan Extra A, Q, an KN*) in table 5, consists almost exlusively of pure ammonical nitrogen. This is due to the neutralisation of the sulpho tanning acid with ammonia. However, some syntans, (e.g. Tanigan Supra LL* Basyntan Extra D Special**, and Basyntan Supra DLE**), have little or no ammonical nitrogen but contain amide or amide nitrogen.

Natural tanning agents differ from syntans in the classification of their nitrogen constituents and, above all, in that they have a smaller total nitrogen content. Mimosa contains, in addition to ammonical nitrogen, amide and amino nitrogen. Mimosa has more nitrogen than chestnut and quebracho. Nevertheless, the entire quantity is only about half as large as that of Tanigan Extra A and only tenth as large as that of Tanigan Extra Q and Tanigan Extra KN (cp. column 3 in table 5).

It must now be asked to what extent the nitrogen of the tanning agents is absorbed together with these by the hide substance. Whether or not the nitrogen of the hide substance is very firmly bound is of no interest in this case and has also not been investigated, since samples for hide substance determination, at any rate in the case of sole leather, are always taken from leather that has not been washed out or has been washed out to only a very small extent. The analysis of specially produced model leathers can be used to show that the nitrogen of the

* Farbenfabriken Bayer AG. Leverkusen.
** Badtshe Anilin—& Sodafabrik AG. Ludwighafen am Rhein.

tanning agents is partly absorbed by the leather. This is made clear by the table 6, in which such leathers have been tabulated and which, for the sake of comparison, contains the values for the untanned hide. As indicated by column 5, the leathers tanned with Tanigan Extra KN and Tanigan Extra Q contain 12.9 and 17% of ammonical nitrogen respectively, calculated on the amino nitrogen, whereas ammoniacal nitrogen is found neither in the raw hide nor in the leathers tanned with mimosa or chestunut extract. In column 5 it will be seen that the untanned pelt contains 3.5% of amide nitrogen, calculated on the amino nitrogen. This figure is a sort of natural constant of the ready-for-tanning, limed, and tawed pelts and it will repeatedly serve us as a guide to the hide value in what follows.

The difference between the leathers tanned with vegetable and synthetic tanning agents respectively becomes particularly impressive when the sum of amide nitrogen and ammonacal nitrogen is related to the amino nitrogen (column-6). The figure of 3.5 stated for untanned hide substance (it is due practically entirely to the amide nitrogen of the hide) is increased to 17.5 and 22.3 respectively by the relatively high proportion of ammonical nitrogen in the leathers tanned with Tanigan Extra KN and Tanigan Extra Q. It is therefore, considerably higher than in the case of the mimosa and chestnut leathers, which are listed under it (4.2 and 4.1). However, as we have seen in table 1, the relatively high proportion of amide N in the mimosa and chestnut extracts has also resulted in a certain increase in this constant characteristic of the untanned hide (from 3.5 to 4.2 in the case of mimosa).

TABLE 7 : Nitrogen contents of fixing agents :

Fixing agent :	*Ammonical N*	*Amide N (=non-amino N —NH_3N)*	*amino N (total N non-amino N)*	*Per cent ammonical N Calculated on amino N*	*Per cent amide N*	*Sum of 4+5*
Column	1	2	3	4	5	6
Hexamethylene tetramine	0.014	395	7	0	almost entirely amide N	
Derugan L	0.006	60	36	0		
Rohagit WL 1	2.9	17.1	10	29	171	200

In order to determine the influence of such falsification on the analysis result, we decided to find out to what extent the *tanning penetration value*, e.g. of a pure mimosa leather, would be falsified if the entire nitrogen contained in the tanning agent were absorbed by the hide.

A leather containing 14% water, 1% fat, 1% ash, 10% organic substances lost by washing out, 40% hide substance and 34% bound tanning agent has a tannin penetration value of 85.34 g. of mimosa tanning agent contains 34 ×3.5 mg. of nitrogen, i.e. 120 mg. of nitrogen—a value which, when multiplied by 5.62 the factor of hide collagen, appears to give 0.67 gm. of hide substance. In consequence the figures obtained by the chemical analysis of leather are shifted as follows : 40% hide substance and 34% bound tanning agent give a tannin penetration value of 85 ; if the calculation is based on 40.67% of hide substance and 33.33% of bound tanning agent, the tannin penetration value is 82. In other words the change undergone by the tanning penetration value amounts to three units and is therefore relatively small. Under the same conditions the falsification of the analysis is much more pronounced when Tanigan Extra Q is used alone . In this case the tanning penetration value is shifted from 85 to 47.

(b) Nitrogen content of fixing agents

The fixing agents, which are frequently drummed in after the retannage for the purpose of making non-bound vegetable or synthetic tanning agents insoluble, represent a large proportion of the nitrogen-containing substances of the leather that are extraneous to the hide substance.

Until now the nitrogen content of the fixing agents has by no means been regarded as undesirable and has appeared to leather manufacturers as an advantage, as indicated by the following question from a manual[7] : "The ideal practice is to precipitate the non-bound tanning agent present in the leather with albumens..... a further advantage (?) of treating the leather in this way is the opportunity of influencing the tannin penetration value."

In order to get an idea of the size of the nitrogen contents of various fixing agents we analysed three industrial products (table 7). We decided not to investigate more than these three products. The substances chosen are representative of the main types of fixing agent. Derugan L is a representative urea formaldehyde precondensation product and Rohagit WL 1* is a polymethacrylic acid amine. Hexamethylene tetramine is found additionally in many technical fixing agents. Other fixing agents not investigated here contain considerable quantities of ammonical nitrogen in addition to amide nitrogen. In addition, decomposed albumen substance, e.g glue, is also very frequently used as fixing agent and in the case of analysis as described above it would have collagen-resembling values, with the sole difference that the amount of amide nitrogen would be slightly smaller. Table 7 shows that in practice the hexamethylene tetramine nitrogen is accounted for as amide nitrogen. Urea formaldehyde precondensation products contain partly amide nitrogen and partly amino nitrogen. Rohagit WL 1 is evidently not a uniform chemical compound ; however, the majority of the nitrogen contained in this preparation is amide nitrogen . The question how large is the deviation between the

* Rohm & Haas, Darmstadt.

percentage constant for amide nitrogen and the normal collegen amide nitrogen value—in cases where leather is treated with the abovementioned fixing agents —is answered by table 8.

TABLE 8 : Influence of the use offixing agents on the percentage of amide nitrogen calculated on amino nitrogen.

Chestnut leather	4.2
Chestnut leather fixed with hexamethylene teramine	13.85
Chestnut leather fixed with Derugan L	6.08
Chestnut leather fixed with Fixative BH	14.35

It is now intended to calculate in the same way as in the preceding section the change in the tannin penetration value resulting from the use of fixing agents. For this purpose 1 per cent of fixing agent on sammed weight is used and a ratio between the sammed weight and leather weight of the order of 135 : 100 is laid down. In addition, it is assumed that the fixing agent supplied is completely absorbed. However, no attention was paid to the fact that the fixing reduces the amount of substances capable of being washed out by a few percent.

The change in the tannin penetration value which takes place when the fixing agent is taken into account in this way shows that hexamethylene tetramine reduces the tannin penetration value from 85 to 75 there is much less reduction in the case of Derugan L (82) and Rohagti WL 1 (84).

(To be continued)

*By Courtesy : M/s. BAYER

UNCTAD PEGS GDP GROWTH AT 7% IN 2018; CHINA REMAINS STAGNANT AT 6.7%

The United Nations agency on Wednesday said huge volumes of bad debt in the banking set risked derailing credit expansion and ultimately investment and economic growth.

India's gross domestic product (GDP) growth may stop at 7 per cent in 2018, according to the United Nations Conference on Trade and Development. The forecast comes on the heel of a nine-quarter high growth of 8.2 per cent in the April-June quarter (Q1) of 2018-19 (FY19).

In its Trade and Development Report 2018, the United Nations agency on Wednesday said huge volumes of bad debt in the banking set risked derailing credit expansion and ultimately investment and economic growth.

"Growing demand for exports has led to a moderate recovery in industrial production although the effects of demonetization are still evident in private consumption trends within the economy," the report pointed out. It added that while the resulting increase in capacity utilization has helped the manufacturing sector, a continuous deceleration in growth has plagued the primary sectors.

While the latest slide in the value of the rupee made it the worst performing currency in South and South East Asia but Turkey, Argentina and others have seen the largest global slide.

On the other hand, the growth forecast for India's northern neighbor China remained stagnant at 6.7 per cent, slightly down from 6.9 per cent in 2017.

Economic revival uneven after global financial crisis

The study focused on the after-effects of the 2008 global financial crisis and concluded that global economic recovery has remained erratic over the past decade. The distribution of recovery has also remained significantly unequal. "Among the few nations that have seen significant recovery is the US, which is now refusing to share the benefits of growth", C P Chandrasekhar, Professor at Jawaharlal Nehru University said, presenting the report.

Also, the report suggested global debt has widened despite no significant rise in private investment. This happened at a time when the rate of increase in stock prices have been much more than the increase in average wages globally, therefore signifying a disconnect in economic growth. The growth of monopolies in both services and manufacturing industries worldwide have fed onto this, the report said. This has led to most of the export segments in various major nations being dominated by fewer players, Chandrasekhar added.

India is currently staring at a ballooning trade deficit on the export side. According to UN statistics, few countries have benefited from export growth as compared to China which has secured the largest share of value added manufacturing exports.

(Business Standard - 26/09/2018)

NBFC CRISIS COULD SLOW DOWN PROJECTS, DERAIL INDIA'S ROBUST GROWTH STORY

A fall in economic growth would be a blow to Prime Minister Narendra Modi and the ruling Bharatiya Janata Party, which is already under pressure from protests over rising fuel costs.

Manzoor Ahmad lost his job as an electrician and is struggling to make ends meet after a crucial road tunnel project shut down in Srinagar, the summer capital of Jammu and Kashmir state in the north.

Construction of the Z-Morh tunnel came to a halt two months ago after Infrastructure Leasing & Financial Services (IL&FS), one of India's top infrastructure funding companies which was helping build the project, stopped paying contractors in the face of a severe cash crunch.

"I have no work since work on the project was stopped in July," said Ahmad, 34, who was earning about Rs 30,000 ($413) a month.

Hundreds of other people working on the project are also out of a job because of non-payments by IL&FS. The company has also defaulted on its debt obligations, roiling Indian markets and sparking worries of a credit crunch in the shadow financing sector.

The company's defaults have highlighted the risk of a sharp growth slowdown in the world's fastest growing major economy, as lenders pare their exposure to the shadow banking space, or what are called non-banking finance companies (NBFCs) in India.

Shadow banks have played an outsized role in lending growth in India in the last two years, and the sector's loan books have grown at more than double the pace of Indian banks, that are currently saddled with about $150 billion of stressed assets.

"Raising money will become increasingly difficult for NBFCs and that will push up the cost of borrowing for these companies and projects will slow down eventually, leading to a broader slowdown in the economy than is currently priced in," said Ashish Vaidya, executive director and head of trading at DBS Bank in Mumbai.

A fall in economic growth would be a blow to Prime Minister Narendra Modi and the ruling Bharatiya Janata Party, which is already under pressure from protests over rising fuel costs, as they prepare for key state elections in late 2018 and a national election due to be held by next May.

Rising rates

The stress is evident in short-term interest rates as the Reserve Bank of India's dollar sales to stem the rupee's fall have sucked up rupee liquidity and raised borrowing costs.

One-year commercial paper has risen by 80 basis points to 9.30 per cent since August and the one-year sovereign treasury bill rate is up 60 bps to 7.73 per cent, while the one-year overnight indexed swap rate is at 7.50 per cent, indicating markets are pricing in a 100 basis points hike in the RBI's key repo rate going forward.

The RBI has raised its policy rate by 50 basis points this year to 6.50 per cent and most analysts expect it to raise rates for a third time next week to stem inflationary pressure due to the sharp fall in the rupee.

There are already signs that financing is suffering, and that could hit capital spending. State-run Power Finance Co, Rural Electrification Corp and North Eastern Electric Power Corp have all scrapped debt issuance plans this month as interest rates have surged.

(Financial Express - 27/09/2018)

GOVT.& RBI MAKE COORDINATED POLICY MOVES TO FIGHT RUPEE DROP, CASH CRUNCH

Recent measures to shore up rupee have underwhelmed and pressure is building on the authorities to do more to curb the yawning trade- and current-account deficits.

India upped the ante in its efforts to restore investor confidence, with the central bank taking measures to ease liquidity for lenders a day after the government raised import tariffs to support the battered rupee.

The Reserve Bank of India allowed banks to dip further into statutory liquidity reserves to help them meet their liquidity coverage ratio needs, a step that would boost cash available for lending. On Wednesday, the government raised import taxes on $12 billion of goods as it seeks to narrow the current-account deficit from a five-year high.

The coordinated policy moves come as Asia's third-largest economy faces a barrage of bad news, from elevated oil prices and a tumbling rupee to the debt crisis at a lender and a cash crunch in the banking system. Foreigners have pulled $8.6 billion from local shares and debt this year, adding to the weakness in the currency that's already Asia's worst performer. The measures may not go far in lifting the despondency that has settled over the markets.

"The measures announced are positive on the margin in the short term but not really game-changing stuff to reverse the trajectory of the rupee and the financial markets," said Ashish Vaidya, head of trading at DBS Bank Ltd. in Mumbai. The benchmark S&P BSE Sensex gave up early gains and traded down 0.1 per cent at 12:19 pm in Mumbai, set to round out its worst month since February 2016. The yield on the benchmark 10-year bond was little changed at 8.07 per cent, after declining five basis points on Wednesday. The rupee was marginally changed at 72.64 per dollar.

Recent measures to shore up the currency have underwhelmed and pressure is building on the authorities to do more to curb

the yawning trade- and current-account deficits. The move to raise import tariffs on 19 items — from air-conditioners to jet fuel — follows similar steps taken by Indonesia, which also runs a current-account gap. The Southeast Asian country has delayed import-heavy infrastructure projects and boosted taxes on imports of luxury goods.

"The additional duties will not serve to reduce the current-account deficit by more than 0.2 per cent of GDP," said Teresa John, an economist at Nirmal Bang Equities Pvt. The increases will likely be countered by the recent jump in oil to above $80 a barrel, she said, forecasting the rupee to likely decline further.

Elevated prices of oil — India's top import — and a weak rupee are likely to fan inflationary pressures, pushing the central bank to raise rates as early as next week. The authority has raised borrowing costs twice this year.

"The monetary policy committee could still play its part in moderating the current-account deficit by extending a tightening bias," Citigroup Inc. economist Samiran Chakraborty wrote in a note. There's a 65-75 per cent probability for a 25-basis point hike next week, he said.

(Economic Times - 25/09/2018)

ONE MORE CESS COMING? GST COUNCIL TO DISCUSS KERALA DISASTER CESS PROPOSAL BUT THERE'S A CATCH

The Goods and Services Tax (GST) Council will discuss the proposal of levying disaster cess in the upcoming meeting scheduled for Friday.

The Goods and Services Tax (GST) Council will discuss the proposal of levying disaster cess in the upcoming meeting scheduled for Friday. Flood-hit Kerala had proposed the idea of levying cess to financially aid the state in the wake of the natural disaster. Kerala has asked the GST Council to consider either an all-India GST cess or, at least, a cess on SGST to help fund the flood-ridden state.

While Kerala had opposed the sugar cess earlier, it is now proposing a disaster cess. Kerala Finance Minister Thomas Issac defended the idea of demanding a disaster cess in the wake of floods in the state by saying that his proposal is to impose 10% cess on SGST, which will not have any implication on revenues of other states and centre.

But there is a catch…

Even if the GST Council takes up the matter for discussion, it is unlikely to take a decision on this on Friday itself as it will require a legal amendment to the GST Act.

"A final decision on the cess levy is unlikely in one meeting as even an option like legal amendment will take time to be implemented," The Indian Express reported quoting a senior official. The concept of cess goes against the idea of the spirit of the uniform taxation system. However, the GST Council can take a decision on levying cess.

Recently, when the idea of cess over the GST was mulled by the GST Council to provide financial help to the ailing sugar industry but it was opposed by some states. States like Kerala and Andhra Pradesh argued that cess will distort the GST structure, set the wrong precedent and will be detrimental to some states.

As a result, the GST Council decided to seek the opinion of the Attorney General KK Venugopal. The AG has not yet given his opinion but the Group of Ministers (GoM), tasked by the GST Council, rejected the idea.

However, even the idea of imposing a cess on SGST will require amendment along with tweaks in the GST Network (GSTN). Moreover, there are concerns that if cess is levied on SGST, both consumers and businesses might migrate to neighbouring states.

(Hindustan Times - 25/09/2018)

AUGUST TRADE GAP NARROWS ON YEAR AS EXPORTS RISE

India's trade deficit shrank to $17.39 billion in August from the near five year high of $18.02 billion in the trailing month as total exports rose on the back of higher outward shipment of petroleum products, engineering, leather, gems and jewellery, and man-made yarn.

The trade gap was $12.72 billion in the year ago period.

Growth in 17 out of 30 sectors aided India's exports rising 19.21% to $27.84 billion in August while imports grew 25.41% to $45.24 billion due to costlier crude oil shipments, data released by commerce and industry ministry showed on Friday.

Gold imports rose 92% to $3.64 billion from $1.86 billion in July due to restocking because of correction in gold prices.

"With elevated crude oil prices and an uptick in the tonnage of gold imports, the August 2018 trade balance rose sharply on a year on year basis," said Aditi Nayar, Principal Economist at ICRA.

The global Brent price has increased by 42.36% on year in August, the government said.

(Economic Times, New Delhi, 15/09/2018)

TRADE CAN AVAIL EXPORT INCENTIVES UNDER MEIS SCHEME : DGFT

The commerce ministry's foreign trade arm DGFT has simplified the procedure for traders to avail export incentives under the MEIS scheme, a move aimed at promoting ease of doing business for exporters. Under Merchandise Exports from India Scheme (MEIS), the government provides duty benefits depending on the product and country.

The Directorate General of Foreign Trade (DGFT) will start the process of system driven approval of the MEIS claim applications from tomorrow in respect of exports made through EDI (electronic data interface) shipping bills.

The move will enable automatic approval of claims made by exporters to avail incentives under this scheme and the new process is allowed through electronic data interchange ports.

"Under the new system, E-Com module for MEIS, regional authorities will not check the MEIS applications. It will be automatically approved. DGFT officials will have to just attest the print and the duty credit scrips," a government official said.

Rewards under the scheme are payable as percentage of realized free on board value and MEIS duty credit scrip or certificate can be transferred or used for payment of a number of duties, including the basic customs duty. "This will reduce time, effort and lead to faster claim approval," the official said.

The directorate has been on regular basis taking measures to simplify the process.

(Daily News Analysis, New Delhi, 17/09/2018)

GOVT MAY RESTRICT IMPORTS TO CHECK RUPEE DECLINE TRADE MEASURES

After the measures to increase capital inflows to check a falling rupee and curb the rising current account deficit (CAD), the next in line could be trade related measures to curb non-essential imports and boost exports.

Finance Minister Arun Jaitley Friday said a broad policy decision has been made to take necessary steps to cut non-essential imports and increase exports, in the backdrop of the CAD touching 2.4% in the June quarter. "The items will be identified in consultation with the line ministries in the next few days and necessary decisions will be taken. We will also keep in mind that the decisions are World Trade Organization (WTO) complaint," he said.

Among non-essential items, imports of gold and electronic goods have picked up significantly in recent months. While imports of gold in July and August grew at an average 65% to $3.3 billion, that of electronic items during April-August period was up 15% to $24.7 billion.

However, gold already attracts a high 10% customs duty, and both commerce ministry and NITI Aayog have been demanding reduction in customs duty to ensure better tax compliance and reduce smuggling of gold into India. Gold is also used as a raw material by the gems and jewellery sector whose exports have started to pick up after a prolonged dip.

Among electronic items, telephone sets including mobile phones constitute the major portion, growing at 16.2% to $17.2 billion during April-July. Other items registering high growth include colour television sets of screen size more than 105cm (101%), digital cameras (153%), digital processing units (42%), memories of electronic integrated circuits (291%) among others. Many of the electronic items have zero customs duty under WTO's first Information Technology Agreement, and the government may not be able to hike duties on those products.

Ajay Sahai, Director General and Chief Executive Officer, Federation of Indian Export Organisations (FIEO) said the list of non-essential imports need to be carefully chosen as they should not be raw materials or intermediaries for the industry. "If it is finished products, that can be looked into and that too, luxury-end items can be targeted. India should also not be seen as a country which id indulging in protectionism," he added.

While exports have been growing at double digits consecutively for the last four months, sectors like ready made garments have been contracting for more than a year now. Exports of ready made garments fell 12.1% to $6.6 billion during the April August period. However, the government may find it difficult to directly provide export incentives to such sectors as the US has challenged India's entire exports subsidy regime at the WTO, claiming that India no more qualifies to provide such subsidies.

Sahai said if the intention is to support the exports sector, then the government should ask banks to lend to exporters. "Liquidity is a big challenge for exports. Banks are not lending to any sector and exports sector is a victim of that," he added. Sahai claimed exporters funds up to Rs. 10,000 – 12,000 crore are also locked up due to delay in goods and services tax (GST) refunds which can be released in an expeditious manner. "States also need to play a pivotal role in refund of input tax credit," he added.

(Hindustan Times - 17/09/2018)

INDIA IN A CATCH-22 SITUATION ON A FREE TRADE PACT WITH US

The government seems to be in two minds about whether it should be go in for a free trade agreement (FTA) with the US. While many officials are against such a pact as they believe it will hurt domestic industry and agriculture, there is a small but influential group in the government that favours an FTA, according to two sources aware of the developments.

"There must be a larger debate and consultations involving other ministries and departments as well as industry and farmer groups in case the Commerce Ministry wants to get into negotiations on a free trade pact within the US. A trade agreement with such a powerful nation will have huge economic as well as political repercussions and is not to be taken lightly," a Delhi-based trade expert told Business Line.

Although India, because of its indecision on the matter, has not officially spelt out its intention to get into a free trade dialogue with the US, there are indications from the White House of some informal talks on trade deals already happening between the two countries.

US President Donald Trump said at a recent event in south Dakota that India had expressed interest in a trade deal with the US for the first time.

India-US 2+2

White House Press Secretary Sarah Sanders told reporters at a news conference a few days after the India-US 2+2 dialogue on defense, economic and strategic issues that India and the US had expressed their willingness to negotiate new and better trade deals, and those conversations are at nascent stages.

"The US has been trying hard over recent years to persuade India to get into a free trade pact as not only would it result in a wider market for products such as farm and dairy items but also give it a handle to try and make India change its policies on intellectual property, retail and investments. All this needs to be carefully considered," a government official said.

The group within the Indian government that is pushing for the trade pact is looking at the increased market access that could benefit the textiles, leather and gems and jewellery industries, and possible geopolitical and diplomatic gains.

"What has to be understood is that whatever increased market access India may get in a handful of areas would be relatively miniscule compared to the policy space we stand to lose. Moreover, on geopolitical issues, there is no guarantee that an FTA will make the US tow India's line. We might end up being at the receiving end with the US trying to dictate terms to us," the trade expert added.

Apart from areas such as dairy and medical equipment, where the US industry is trying to push India to change its domestic laws to gain access. India's generic drugs industry is a sector that could be hit by an FTA with the US.

Over the last few years, the US has been trying its best to make India change its patent laws and adopt less stringent rules on ever greening of patents. Ever greening refers to superficial changes made by a company on a pharmaceutical product whose patent has ended to help it get a fresh patent.

India exported goods worth $48.88 billion to the US in 2017-18, while its imports added up to $26.61 billion. With pressure from the Trump administration on India to reduce the trade deficit, the gap has actually reduced in the April-July 2018-19 period by $1.5 billion with India buying more from the US, including crude oil.

INDIAN ECONOMY SEEMS IN MUCH BETTER SHAPE THAN MANY OTHER ECONOMIES DESPITE HEADWINDS

Things can, of course, change quickly if oil prices hit $100 a barrel, which would make it tough for Indian economy to finance its yawning trade gap. For now, here are some indicators to show why it's better off than five years ago:

A sharp slide in the rupee, rising oil prices and a widening current-account deficit due to slowing capital inflows are throwbacks to the dark days of 2013, when the country bore much of the brunt of the "taper tantrum." Yet the situation today isn't nearly as grim, and India finds itself lower down on the list of risky economies, well behind countries like Argentina and Turkey.

Things can, of course, change quickly if oil prices hit $100 a barrel, which would make it tough for Asia's third-largest economy to finance its yawning trade gap. For now, here are some indicators to show why it's better off than five years ago:

Fiscal deficit

India has broadly adhered to a strategy of fiscal consolidation that's limited the risk of a spillover. The fiscal gap has averaged 3.9 percent of gross domestic product between 2014 to 2018, down from an average 5.5 percent between 2009 to 2013. For foreigners, the fact that India is trying to run a tight ship is a big plus since overshooting budget can lead to external account problems.

Current Account

Most of the improvement in the current account between 2013 and 2017 was due to falling oil and gold prices. But with oil heading north, the gap has deteriorated in the past year. Economists in a Bloomberg survey forecast it to widen to 2.5 percent of GDP in the fiscal year 2019, compared with 1.9 percent a year ago. A wider deficit increases external risks, but in early 2013 the current-account deficit reached 4.8 percent of GDP.

"India remains vulnerable to increasing oil prices, but its external position is stronger today than during the taper tantrum," analysts led by Sergi Lanau, deputy chief economist at the Institute of International Finance, wrote in a report.

Inflation

With a central bank keen to burnish its inflation-targeting credentials, keeping a lid on prices has become paramount. Consumer inflation eased to an average 5.7 percent between 2014 and 2018 from the 10.1 percent average seen between 2009 and 2013. Some economists say that with the easing of gains in consumer prices, the demand for gold as a hedge against inflation has ebbed, helping cool the pressure on the current-account deficit.

Forex Reserves

India's foreign-exchange reserves rose by $120 billion between the fiscal years 2014 and 2018 to hit a record $426 billion in April this year, thanks to the Reserve Bank of India's policy of steadily buying dollars after the 2013 crisis. Although the reserves have been depleted by about $26 billion since April, that still leaves the RBI with some firepower. Import cover stands at more than nine months, which is well above the recommended three months, and compares with the seven months of import cover in 2013.

Policy Steps

The central bank has been measured in both actions and words this time around. Back in May 2013, the RBI cut the benchmark repurchase rate by 25 basis points to 7.25 percent only to quickly reverse course as the external situation deteriorated rapidly. It raised three times between September 2013 and January 2014, taking the rate to 8 percent.This time around, it's raised the benchmark rate twice since June to 6.5 percent.

Five years ago, the RBI acted to curb speculation and volatility in the currency, as well as took steps to bolster reserves and ensure access to swap lines, especially for oil importers. It also took measures to contain the current-account deficit, working with the government to impose duties on imports like gold.

In the RBI's own words from the annual report of 2014: "The policy response was multi-pronged."

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