

表4 進口總值—按主要貨品分 (1/3)

年(月)別	總 計	1.活動物；動 物產品	2.植物產品	(1)麥 類	(2)玉蜀黍	(3)大 豆	3.動植物油脂 3.Animal or Vegetable Fats and Oils and their Cleavage Products
	Total	1.Live Animals; Animal Products	2.Vegetable Products	(1)Wheat, Barley and Similar Articles Thereof	(2)Maize	(3)Soybean	
(1) 按新臺幣計算 (百萬元)							
109年	8,460,562	113,621	139,044	12,157	26,146	30,584	11,377
110年	10,697,023	113,102	166,163	12,473	36,984	41,802	15,213
111年	12,702,450	144,315	211,434	18,117	51,846	55,308	20,186
112年	10,951,121	141,784	191,542	15,302	39,647	48,380	16,433
113年	12,648,883	141,874	185,099	13,637	35,158	41,553	16,499
4月	1,000,965	11,410	14,308	1,343	1,830	4,018	1,532
5月	1,014,693	12,147	14,375	1,289	3,067	2,539	1,400
6月	1,137,231	11,735	16,444	1,413	3,276	3,776	1,573
7月	1,139,668	11,887	15,308	845	1,911	4,270	1,595
8月	1,047,023	12,516	15,324	1,448	2,521	2,347	1,462
9月	1,070,169	10,947	15,712	1,690	2,721	3,282	1,059
10月	1,095,742	12,128	14,195	988	2,227	3,077	1,409
11月	1,066,289	12,071	15,262	723	3,503	3,068	1,553
12月	1,218,339	14,258	18,811	1,443	3,808	4,231	1,572
1~ 4月	3,859,728	44,185	59,667	3,798	12,124	14,965	4,876
114年							
1月	942,147	12,586	15,139	1,264	2,682	2,688	1,210
2月	1,136,059	12,114	13,731	733	2,832	3,743	1,343
3月	1,400,482	14,509	14,578	1,090	1,493	3,477	1,623
4月	1,363,539	12,388	16,389	929	4,356	2,702	1,471
1~ 4月	4,842,228	51,598	59,836	4,017	11,363	12,611	5,646
較上年同	當月	36.2	8.6	14.5	-30.8	138.0	-32.7
期增減%	累計	25.5	16.8	0.3	5.7	-6.3	15.8
(2) 按美元計算 (百萬元)							
109年	286,147.6	3,840.0	4,700.0	410.5	884.3	1,033.2	384.7
110年	381,957.5	4,037.3	5,931.3	445.8	1,320.2	1,491.5	543.2
111年	428,082.5	4,864.0	7,125.6	610.1	1,742.9	1,870.8	678.3
112年	351,631.6	4,554.9	6,152.0	491.4	1,273.2	1,556.0	528.0
113年	394,365.3	4,423.6	5,774.9	424.6	1,098.6	1,297.4	514.1
4月	31,179.6	355.4	445.7	41.8	57.0	125.2	47.7
5月	31,295.7	374.7	443.4	39.8	94.6	78.3	43.2
6月	35,183.7	363.1	508.7	43.7	101.3	116.8	48.7
7月	35,064.0	365.7	471.0	26.0	58.8	131.4	49.1
8月	32,124.4	384.0	470.2	44.4	77.3	72.0	44.9
9月	33,428.8	342.0	490.8	52.8	85.0	102.5	33.1
10月	34,251.2	379.1	443.7	30.9	69.6	96.2	44.0
11月	33,142.5	375.2	474.4	22.5	108.9	95.4	48.3
12月	37,507.7	439.0	579.1	44.4	117.3	130.3	48.4
1~ 4月	122,367.5	1,400.8	1,893.4	120.1	385.7	474.5	154.5
114年							
1月	28,642.9	382.7	460.3	38.4	81.5	81.7	36.8
2月	34,665.1	369.7	419.0	22.4	86.4	114.2	41.0
3月	42,616.8	441.5	443.6	33.2	45.4	105.8	49.4
4月	41,455.0	376.6	498.3	28.2	132.5	82.2	44.7
1~ 4月	147,379.7	1,570.5	1,821.2	122.2	345.8	384.0	171.8
較上年同	當月	33.0	6.0	11.8	-32.5	132.3	-34.4
期增減%	累計	20.4	12.1	-3.8	1.8	-10.3	11.2

Table 4 Imports by Principal Commodity (1/3)

4.調製食品； 飲料及菸酒 4.Prepared Foodstuffs; Beverages, Spirits and Tobacco Products	(1)調製食品 (1)Prepared Foodstuffs	5.礦產品 5.Mineral Products	(1)原 油 (1)Petroleum	6.化學品 6.Chemicals	(1)有機化學品 (1)Organic Chemicals	Year and Month
(a) Counted in N.T. Dollars (NT\$ Million)						
139,708	74,861	1,000,978	371,103	784,084	210,325	2020
151,868	80,547	1,605,527	557,055	942,590	294,748	2021
171,822	93,633	2,495,691	920,028	1,066,437	289,489	2022
185,783	100,769	1,915,563	782,184	893,036	237,861	2023
186,035	102,706	1,867,988	766,177	944,545	252,093	2024
15,410	8,343	149,034	60,547	78,131	22,947	Apr.
14,802	8,423	171,659	75,919	78,005	22,345	May
16,270	8,728	181,137	90,165	82,197	22,253	June
15,554	9,069	168,015	67,226	79,705	21,057	July
17,014	9,007	156,219	66,761	85,239	22,348	Aug.
15,329	9,244	161,006	65,335	77,281	19,263	Sept.
15,242	7,701	146,001	49,651	79,598	19,795	Oct.
15,378	8,167	136,869	52,363	75,985	17,266	Nov.
18,658	11,191	156,966	56,539	83,989	18,889	Dec.
57,790	31,177	590,115	242,218	302,546	88,877	Up to Apr. 2025
13,179	7,389	116,975	44,604	59,660	14,456	Jan.
13,526	7,545	149,081	65,471	78,262	18,374	Feb.
16,632	9,751	178,661	84,264	90,917	19,037	Mar.
14,710	8,316	136,915	52,991	76,698	17,679	Apr.
58,047	33,001	581,632	247,329	305,537	69,547	Up to Apr.
-4.5	-0.3	-8.1	-12.5	-1.8	-23.0	% Current Month
0.4	5.8	-1.4	2.1	1.0	-21.7	% Cumulative
(b) Counted in U.S. Dollars (US\$ Million)						
4,724.7	2,530.0	33,787.7	12,504.9	26,497.2	7,108.6	2020
5,420.3	2,874.7	57,367.4	19,904.0	33,648.7	10,520.5	2021
5,779.9	3,149.4	83,932.0	30,927.7	36,024.2	9,813.2	2022
5,962.0	3,233.9	61,540.7	25,094.1	28,686.9	7,634.1	2023
5,799.7	3,200.8	58,260.2	23,896.4	29,454.8	7,865.4	2024
480.0	259.8	4,642.8	1,886.2	2,433.5	714.6	Apr.
456.5	259.8	5,294.8	2,341.7	2,405.8	689.0	May
503.4	270.0	5,604.5	2,789.8	2,542.8	688.3	June
478.6	279.0	5,169.7	2,068.5	2,452.0	647.7	July
522.0	276.3	4,793.5	2,048.5	2,615.2	685.6	Aug.
478.8	288.7	5,029.9	2,041.1	2,413.8	601.6	Sept.
476.5	240.7	4,563.9	1,552.1	2,487.9	618.6	Oct.
477.9	253.8	4,254.5	1,627.7	2,361.6	536.5	Nov.
574.4	344.5	4,832.7	1,740.7	2,585.5	581.4	Dec.
1,831.6	988.0	18,716.6	7,686.3	9,590.1	2,816.7	Up to Apr. 2025
400.7	224.6	3,556.5	1,356.1	1,813.6	439.4	Jan.
412.7	230.2	4,549.3	1,997.9	2,387.9	560.6	Feb.
506.1	296.7	5,437.0	2,564.3	2,766.5	579.2	Mar.
447.2	252.8	4,162.8	1,611.1	2,331.6	537.4	Apr.
1,766.7	1,004.3	17,705.7	7,529.5	9,299.6	2,116.4	Up to Apr.
-6.8	-2.7	-10.3	-14.6	-4.2	-24.8	% Current Month
-3.5	1.7	-5.4	-2.0	-3.0	-24.9	% Cumulative

表4 進口總值—按主要貨品分 (2/3)

年(月)別	7.塑膠、橡膠及其製品	(1)塑膠原料	(2)塑膠製品	(3)橡膠及其製品	8.毛皮及其製品	9.木及木製品
	7.Plastics and Articles Thereof; Rubber and Articles Thereof	(1)Plastics	(2)Plastic products	(3)Rubber and Articles Thereof	8.Fur and Articles Thereof	9.Wood and Articles of Wood
(1) 按新臺幣計算 (百萬元)						
109年	263,875	97,443	127,813	38,619	26,670	33,814
110年	311,226	123,138	143,118	44,969	30,177	41,797
111年	315,242	128,526	141,207	45,509	36,202	43,350
112年	267,760	99,125	128,281	40,354	40,101	37,856
113年	300,029	115,389	141,351	43,289	39,644	38,173
4月	24,844	9,278	11,917	3,649	3,129	3,296
5月	25,249	9,992	11,755	3,503	3,395	3,158
6月	27,008	10,409	12,700	3,900	3,502	3,679
7月	26,355	10,059	12,523	3,773	3,563	3,160
8月	25,692	10,176	11,722	3,794	3,133	3,489
9月	26,076	10,414	11,905	3,758	2,663	3,366
10月	24,499	9,689	11,313	3,496	3,349	2,861
11月	23,742	8,781	11,692	3,269	3,237	3,179
12月	28,735	11,003	13,702	4,030	3,751	3,420
1~ 4月	92,674	34,867	44,041	13,766	13,053	11,860
114年						
1月	20,641	7,635	9,961	3,045	2,746	2,618
2月	25,535	9,990	11,865	3,681	2,961	2,262
3月 r	31,794	12,167	15,101	4,526	3,181	3,721
4月 p	27,081	9,962	13,358	3,761	2,983	3,380
1~ 4月	105,051	39,753	50,285	15,013	11,870	11,980
較上年同	當月					
期增減%	累計					
	9.0	7.4	12.1	3.1	-4.7	2.5
	13.4	14.0	14.2	9.1	-9.1	1.0
(2) 按美元計算 (百萬元)						
109年	8,919.6	3,292.0	4,321.7	1,306.0	902.9	1,141.3
110年	11,106.5	4,396.4	5,106.8	1,603.3	1,076.1	1,492.5
111年	10,655.4	4,349.0	4,769.2	1,537.3	1,218.1	1,463.7
112年	8,597.7	3,185.1	4,116.8	1,295.8	1,286.8	1,216.7
113年	9,351.4	3,596.8	4,405.8	1,348.8	1,236.5	1,190.1
4月	773.7	289.0	371.1	113.6	97.4	102.7
5月	778.6	308.2	362.5	108.0	104.7	97.4
6月	835.4	322.0	392.8	120.6	108.3	113.8
7月	810.7	309.5	385.2	116.0	109.6	97.2
8月	788.1	312.2	359.5	116.3	96.1	107.0
9月	814.3	325.3	371.8	117.3	83.1	105.1
10月	765.7	302.9	353.6	109.2	104.6	89.4
11月	737.8	272.9	363.4	101.5	100.6	98.8
12月	884.4	338.7	421.7	124.0	115.4	105.3
1~ 4月	2,936.3	1,105.0	1,395.4	435.9	414.1	376.0
114年						
1月	627.4	232.1	302.7	92.5	83.5	79.6
2月	779.0	304.8	362.0	112.2	90.3	69.0
3月 r	967.3	370.2	459.4	137.7	96.8	113.2
4月 p	823.1	302.9	406.0	114.2	90.6	102.7
1~ 4月	3,196.8	1,210.0	1,530.2	456.6	361.2	364.5
較上年同	當月					
期增減%	累計					
	6.4	4.8	9.4	0.6	-7.0	0.1
	8.9	9.5	9.7	4.7	-12.8	-3.1

Table 4 Imports by Principal Commodity (2/3)

10.紙漿；紙及其製品；印刷品 10.Pulp, Paper and Printing Products	11.紡織品 11.Textiles and Textile Articles	12.鞋、帽及其他飾品 12.Footwear, Headgear, Umbrellas; Artificial Flowers; Articles of Human Hair	13.非金屬礦物製品 13.Articles of Stone, Plaster, Cement; Ceramic Products; Glass and Glassware	14.珠寶及貴金屬製品 14.Pearls, Precious Stones, Precious Metals; Imitation Jewellery; Coin	(1)黃金 (1)Gold	Year and Month
(a) Counted in N.T. Dollars (NT\$ Million)						
68,266	99,562	23,542	87,043	112,663	58,320	2020
76,882	108,022	22,525	92,840	144,592	62,248	2021
82,388	117,042	29,822	100,661	135,064	59,187	2022
76,643	113,859	32,145	85,887	126,872	53,361	2023
80,755	116,997	33,466	95,769	168,532	86,228	2024
5,652	8,293	2,008	7,803	12,268	4,773	Apr.
6,831	8,684	2,631	7,815	15,355	8,649	May
7,212	9,055	3,403	8,792	14,245	6,960	June
7,140	10,002	2,815	8,278	12,429	6,132	July
7,242	10,299	2,486	8,454	15,686	9,350	Aug.
7,090	10,653	3,447	8,261	12,109	5,138	Sept.
6,372	10,580	2,698	7,771	16,012	8,789	Oct.
6,148	9,983	2,339	8,473	21,578	13,935	Nov.
8,181	11,550	3,649	9,052	14,787	6,823	Dec.
24,538	36,189	9,999	28,873	46,331	20,452	Up to Apr. 2025
5,101	8,746	2,362	6,825	10,318	5,072	Jan.
6,335	9,022	1,934	8,211	11,131	5,867	Feb.
7,509	11,575	3,062	9,765	14,328	6,452	Mar.
6,192	9,338	2,265	8,682	20,660	13,369	Apr.
25,137	38,681	9,623	33,483	56,437	30,760	Up to Apr.
9.6	12.6	12.8	11.3	68.4	180.1	% Current Month
2.4	6.9	-3.8	16.0	21.8	50.4	% Cumulative
(b) Counted in U.S. Dollars (US\$ Million)						
2,305.3	3,365.8	796.1	2,942.1	3,821.8	1,976.8	2020
2,745.1	3,852.6	802.8	3,313.1	5,161.1	2,224.8	2021
2,775.2	3,933.7	1,000.5	3,397.1	4,543.0	1,980.1	2022
2,460.4	3,648.0	1,031.4	2,758.8	4,071.8	1,708.4	2023
2,517.2	3,646.7	1,043.4	2,984.7	5,250.8	2,684.1	2024
176.0	258.1	62.5	243.0	382.2	148.7	Apr.
210.6	267.6	81.1	241.0	473.6	266.8	May
223.1	279.9	105.3	271.9	440.8	215.4	June
219.6	307.5	86.6	254.7	382.4	188.7	July
222.2	315.8	76.2	259.3	481.3	286.9	Aug.
221.4	332.5	107.6	258.0	378.3	160.5	Sept.
199.1	330.6	84.3	242.9	500.5	274.7	Oct.
191.0	310.0	72.7	263.3	670.8	433.2	Nov.
251.8	355.3	112.3	278.6	455.3	210.1	Dec.
778.4	1,147.6	317.4	914.9	1,467.9	647.9	Up to Apr. 2025
155.1	265.7	71.8	207.4	313.7	154.2	Jan.
193.2	275.0	59.0	250.5	339.7	179.0	Feb.
228.4	352.0	93.1	297.1	436.0	196.3	Mar.
188.2	283.6	68.8	263.9	628.2	406.5	Apr.
764.9	1,176.3	292.7	1,018.9	1,717.5	936.1	Up to Apr.
7.0	9.9	10.0	8.6	64.4	173.4	% Current Month
-1.7	2.5	-7.8	11.4	17.0	44.5	% Cumulative

表4 進口總值—按主要貨品分 (3/3)

年(月)別	15.基本金屬 及其製品	(1)鋼鐵及其 製品	(2)銅及其 製品	16.機械及電 機設備	(1)電子零組 件	(2)機 械	(3)電機產品
	15.Base Metals and Articles of Base Metal	(1)Iron and Steel and Articles Thereof	(2)Copper and Articles Thereof	16.Machinery and Electrical Equipment	(1)Parts of Electronic Product	(2)Machinery	(3)Electrical Machinery Products
(1) 按新臺幣計算 (百萬元)							
109年	579,229	276,332	144,300	4,013,317	2,055,058	984,367	312,552
110年	815,458	427,334	198,840	4,988,955	2,557,021	1,243,870	394,987
111年	829,426	410,035	196,003	5,707,477	2,914,687	1,470,887	427,896
112年	706,053	359,979	170,908	4,901,607	2,539,482	1,168,946	390,640
113年	848,636	400,741	242,873	6,070,671	3,346,291	1,145,842	441,462
4月	67,126	34,299	17,522	481,416	253,808	103,670	37,464
5月	79,147	37,382	25,157	471,113	249,194	97,016	35,553
6月	92,361	36,095	38,464	530,845	300,733	100,638	35,527
7月	86,365	33,760	30,254	567,361	300,760	107,638	39,218
8月	76,800	33,470	22,939	496,439	277,798	101,259	36,004
9月	65,568	33,284	15,924	540,334	306,380	91,557	38,593
10月	68,833	33,690	16,219	576,222	325,209	99,862	39,961
11月	68,374	32,917	17,765	545,311	293,442	95,116	38,188
12月	66,125	31,737	15,619	626,538	343,754	127,527	45,423
1~ 4月	245,061	128,407	60,533	1,716,508	949,021	325,229	132,996
114年							
1月	62,552	31,223	14,514	509,739	295,273	84,236	33,724
2月	67,260	33,166	17,265	616,902	325,621	124,724	44,971
3月 r	81,813	35,126	22,114	767,596	385,660	156,391	56,558
4月 p	71,032	34,239	17,558	812,990	342,148	138,217	52,351
1~ 4月	282,657	133,754	71,451	2,707,228	1,348,702	503,569	187,604
較上年同	當月						
期增減%	累計						
	5.8	-0.2	0.2	68.9	34.8	33.3	39.7
	15.3	4.2	18.0	57.7	42.1	54.8	41.1
(2) 按美元計算 (百萬元)							
109年	19,568.6	9,334.9	4,872.1	135,826.8	69,537.2	33,327.4	10,569.9
110年	29,127.5	15,267.9	7,101.2	178,137.2	91,301.3	44,414.7	14,100.0
111年	28,127.0	13,905.4	6,656.2	192,338.6	98,450.9	49,342.9	14,429.8
112年	22,674.5	11,568.5	5,492.0	157,308.7	81,406.2	37,642.0	12,551.5
113年	26,436.0	12,496.3	7,555.6	189,167.1	104,297.9	35,681.9	13,759.0
4月	2,090.8	1,068.3	545.8	14,996.7	7,906.7	3,229.3	1,166.8
5月	2,441.0	1,152.9	775.9	14,530.9	7,686.4	2,992.2	1,096.4
6月	2,857.4	1,116.6	1,190.1	16,423.9	9,304.8	3,113.5	1,099.0
7月	2,657.1	1,038.6	930.9	17,456.6	9,254.1	3,311.7	1,206.4
8月	2,356.3	1,026.9	703.9	15,232.1	8,524.0	3,106.7	1,104.4
9月	2,048.0	1,039.6	497.4	16,879.2	9,571.3	2,859.9	1,205.3
10月	2,151.5	1,053.0	507.0	18,012.2	10,165.9	3,121.5	1,249.1
11月	2,125.0	1,023.1	552.2	16,950.2	9,121.6	2,956.4	1,186.8
12月	2,035.6	977.0	480.9	19,289.3	10,583.5	3,926.0	1,398.3
1~ 4月	7,764.2	4,068.6	1,917.4	54,392.6	30,086.4	10,294.2	4,213.4
114年							
1月	1,901.6	949.1	441.3	15,497.6	8,977.6	2,560.8	1,025.1
2月	2,052.2	1,011.9	526.8	18,824.6	9,936.5	3,805.7	1,372.1
3月 r	2,489.4	1,068.8	672.9	23,358.9	11,736.4	4,759.0	1,720.9
4月 p	2,159.4	1,040.9	533.8	24,717.8	10,402.7	4,202.1	1,591.5
1~ 4月	8,602.5	4,070.8	2,174.9	82,399.0	41,053.2	15,327.7	5,709.7
較上年同	當月						
期增減%	累計						
	3.3	-2.6	-2.2	64.8	31.6	30.1	36.4
	10.8	0.1	13.4	51.5	36.5	48.9	35.5

Table 4 Imports by Principal Commodity (3/3)

(4)資通與視聽產品 (4)Information, Communication and Audio-video Products	(5)家用電器 (5)Domestic Appliances	17.運輸工具 17.Vehicles, Aircraft, Vessels and Associated Transport Equipment	18.光學及精密儀器；鐘錶；樂器 18.Optical, Precision Instruments; Clocks and Watches; Musical Instruments	(1)精密儀器 (1)Precision Instruments	19.其 他 19.Others	Year and Month
(a) Counted in N.T. Dollars (NT\$ Million)						
616,932	44,408	347,479	426,326	329,014	189,964	2020
741,442	51,635	376,611	487,114	380,460	206,361	2021
832,503	61,504	435,585	530,684	424,045	229,620	2022
746,398	56,142	489,527	463,659	361,761	265,010	2023
1,075,965	61,110	518,375	554,811	436,490	440,987	2024
81,406	5,067	49,073	46,667	37,753	19,566	Apr.
83,625	5,725	41,815	39,102	31,010	18,010	May
88,615	5,331	52,438	49,738	38,372	25,596	June
114,819	4,926	48,983	48,607	37,657	22,543	July
76,730	4,649	42,462	45,157	34,652	21,909	Aug.
99,261	4,542	38,555	48,767	37,787	21,946	Sept.
106,340	4,849	34,417	53,995	43,148	19,563	Oct.
113,086	5,478	42,270	51,451	40,727	23,086	Nov.
103,264	6,570	46,252	68,014	55,462	34,032	Dec.
290,223	19,040	171,182	149,980	117,676	254,302	Up to Apr. 2025
91,759	4,747	22,493	44,989	36,749	24,268	Jan.
116,358	5,228	39,571	58,562	47,009	18,314	Feb.
162,112	6,875	44,788	80,651	67,935	23,782	Mar.
274,282	5,992	53,824	64,375	53,990	22,167	Apr.
644,511	22,842	160,676	248,576	205,683	88,532	Up to Apr.
236.9	18.3	9.7	37.9	43.0	13.3	% Current Month
122.1	20.0	-6.1	65.7	74.8	-65.2	% Cumulative
(b) Counted in U.S. Dollars (US\$ Million)						
20,890.1	1,502.3	11,777.4	14,415.8	11,124.2	6,429.7	2020
26,478.6	1,842.6	13,442.8	17,387.6	13,582.5	7,364.4	2021
28,041.3	2,073.8	14,641.8	17,871.6	14,276.8	7,712.7	2022
23,905.3	1,803.7	15,743.2	14,906.2	11,632.5	8,502.9	2023
33,523.1	1,905.1	16,162.2	17,278.4	13,592.8	13,873.6	2024
2,536.0	157.8	1,528.7	1,453.7	1,176.0	609.2	Apr.
2,579.4	176.6	1,289.7	1,206.0	956.4	555.2	May
2,741.7	164.9	1,622.4	1,538.8	1,187.2	791.6	June
3,532.9	151.5	1,507.1	1,495.4	1,158.5	693.3	July
2,354.4	142.6	1,302.8	1,385.5	1,063.2	671.9	Aug.
3,100.9	141.9	1,204.3	1,523.4	1,180.4	685.2	Sept.
3,324.1	151.6	1,075.8	1,687.9	1,348.8	611.3	Oct.
3,515.3	170.3	1,313.9	1,599.2	1,265.9	717.2	Nov.
3,179.3	202.3	1,423.9	2,093.9	1,707.5	1,047.4	Dec.
9,195.2	603.5	5,422.1	4,748.4	3,724.9	8,100.4	Up to Apr. 2025
2,789.8	144.3	683.8	1,367.7	1,117.2	737.5	Jan.
3,550.7	159.5	1,207.5	1,787.0	1,434.5	558.6	Feb.
4,933.4	209.2	1,362.9	2,454.2	2,067.3	723.4	Mar.
8,339.3	182.2	1,636.4	1,957.1	1,641.4	673.7	Apr.
19,613.3	695.2	4,890.5	7,566.0	6,260.4	2,693.1	Up to Apr.
228.8	15.4	7.0	34.6	39.6	10.6	% Current Month
113.3	15.2	-9.8	59.3	68.1	-66.8	% Cumulative