In-depth Analysis on Promotion, Repetition and Dropout of Basic Education in Myanmar

(Research Paper 20141105)

Prof. Dr. Hiromitsu Muta
Policy Advisor, Ministry of Education
The Republic of the Union of Myanmar

Summary

The dropout rates both during an academic year and between academic years were studied in this paper. The dropout rate from September 2012 to March 2013 was calculated at 3.45% for G1 students nationwide or 45,743 students. This figure was not counted as dropouts until now because of limited statistics, but this figure is not negligible. The transition rates of students were calculated for each half year, from March to September (between consecutive grades), and September to next March (between the same grades). These transition rates were multiplied one by one, and the cumulative transition rates were calculated. The cumulative transition rate showed the expected gross survival rate of G1 students as they progressed up to a certain grade. The number of students as of September 2012 was used as a base line. The expected calculated value was 0.2817 until G11. It is lower than the previous estimates (Muta, 2014a; 2014c) because the baseline was set at the middle of the academic year. There is a great difference between the states/regions, but the difference was notable between the urban and rural areas. The migration of students from the rural to urban areas is prominent. Educational development in rural areas should be enhanced to provide students access to better education.

Although it is not clearly appear in current statistics, there is a possibility that a large number of G1 dropouts re-enter primary schools in actuality. Of course, it is better to repeat a grade than to dropout permanently. If the number of G1 students is inflated by actual repeaters, the estimated number of students, the necessary number of teachers, and the required budget in future should be reconsidered because the net number of G1 students is the basis of the simulation.

1. Purpose of the study

One of the important policy targets is to achieve complete enrollment within the compulsory educational system in Myanmar. Enrollment to G1 should be secured for all children, dropout and repetition must be prevented, and all students should graduate from the regular school years. When the results of the new census conducted in March and April 2014 are published, the intake rate for the first grade will become clear, but it may take some time. The intake rate issue remains until the results become known, and promotion, repetition, and dropout issues are discussed in detail in this paper.

Concerning dropout rates, a study on the estimated number of future students based on an assumption that the dropout rate will improve at a certain rate (Muta, 2014a), a study on the disparity in dropout rates among states/regions (Muta, 2014b), a study on the estimated number of students in future based on the current improvement trend have been published thus far. The dropout rates used in the previous papers are based on Education Statistics as of March for each year. These data have their own limitations because the previous studies only examined the number of students who dropped out between two academic years. But, there must be students who dropped out before the end of the academic year. That is why the data for the middle of the school year is necessary. In this paper, data taken during the middle of the school year is also used to analyze the dropout issue in detail.

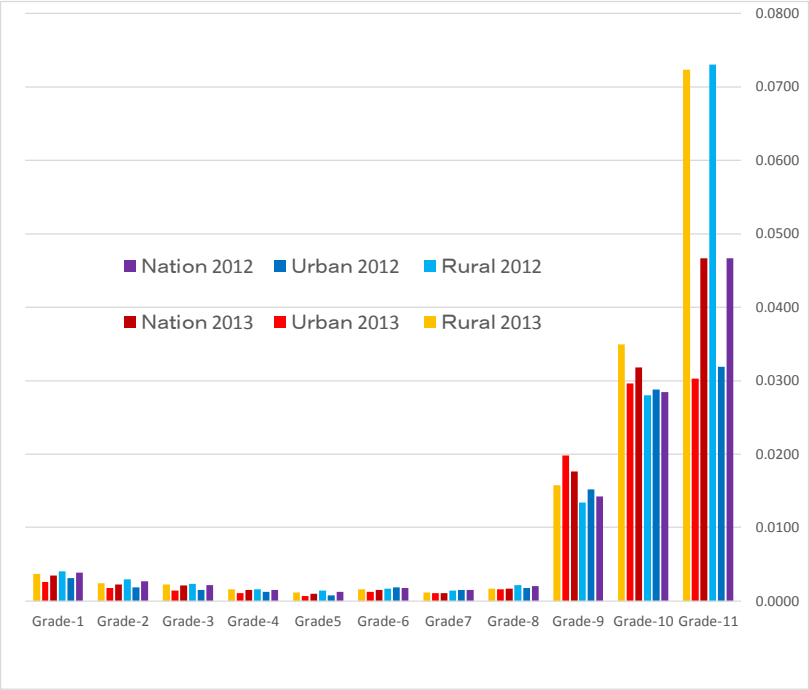

Figure 1 Repetition Rate in March 2012, 2013 in Urban and Rural Areas

The transition rate was defined by the ratio of students between one different grades of consecutive academic years in general. The transition rate during an academic year is defined in the same way, such as the ratio of the number of students between two different time periods in a same academic year.

In Myanmar, the repetition rates are very small at the primary and middle school levels as shown in Figure 1. This fact allows the transition rate to be used as a proxy for "1-dropout rate". In contrast, there is a study insisting that the repetition rate was large such as 12% at the G1 level according to the household survey (Spohr, 2014). This discrepancy is also discussed in this paper.

2. Method

The most recent data on the consecutive academic years available were from March 2012 and 2013. The data from September 2012 was also available. September is not the first month of the academic year, but registration continues throughout the entire academic year. Thus, a few dropouts were expected by September, and it was assumed that the number of students in September was close to peak enrollment for the academic year. The main indicator used in this chapter is the transition rate because it was easy to handle.

In contrast, the time series data as of March were available for the last six years. The five-year trend from March 2008 to March 2013 was also analyzed. Although no data on the age distribution of students nationwide were available, the data for March 2009 and March 2013 in the Yangon Region were used taking into careful account their limitations for generalization.

3. Promotion, repetition and dropout of students

3.1 Transition rate for the entire nation

The comparison between the data for March 2012 and September 2012 shows the transition of students between consecutive academic years, and the comparison between the data for September 2012 and March 2013 showed the transition of students during the academic year. When the transition rate from March 2012 to September 2012 and the transition rate from September 2012 to March 2013 were multiplied, the transition rate from March 2012 to March 2013 was obtained.

Table 1 shows the transition rate A (from March 2012 to September 2012), the transition rate B (from September 2012 to March 2013), and the transition rate C (from March 2012 to March 2013). Transition rate A depends on the promotion, repetition and dropout rate; however, it was nearly same as the promotion rate because the repetition rate is negligible except at the high

school level as mentioned earlier. If there is no inflow or outflow from and to the educational system under consideration, a transition rate may not exceed 1.0. This was true for the total consisting both the urban and rural areas, but it was not true for the urban area as shown in Table 1. The value which exceeds 1.0 means that there is a migration of students from other educational systems. In the case of Table 1, there appeared to be a migration from the rural to urban areas even at the G2 level. The difference in the transition rates from G1 to G2 did not exceed 1.0, but it was large between the rural and urban areas. A fairly large portion of this difference may come from the migration from the rural to urban area as in other grade levels. It seems that the students tend to migrate from the rural to urban area at any time after they are mature enough to commute to remote schools. If the educational environment of local schools in rural areas improves, this kind of migration may decrease.

Table 1 Transition Rate between Academic Years and During an Academic Year

From	Mar. 2012	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	
To	Sep. 2012	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11	
	Total	0.8772	0.9682	0.9696	0.9440	0.8017	0.9185	0.9189	0.9258	0.8582	0.8547	
A	Urban	0.9618	1.0211	1.0170	1.0112	1.1611	0.9663	0.9740	1.1038	1.0447	0.8286	
	Rural	0.8562	0.9537	0.9560	0.9238	0.7292	0.8945	0.8881	0.8143	0.6921	0.8961	
	U-R	0.1055	0.0674	0.0610	0.0875	0.4319	0.0718	0.0860	0.2895	0.3526	−0.0676	
From	Sep. 2012	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
To	Mar. 2013	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
	Total	0.9655	0.9800	0.9845	0.9839	0.9813	0.9825	0.9841	0.9829	0.9780	0.9737	0.9687
B	Urban	0.9355	0.9619	0.9691	0.9709	0.9633	0.9822	0.9920	0.9955	0.9813	0.9961	0.9968
	Rural	0.9730	0.9851	0.9890	0.9879	0.9872	0.9827	0.9798	0.9752	0.9751	0.9436	0.9276
	U-R	−0.0375	−0.0231	−0.0198	−0.0170	−0.0239	−0.0006	0.0122	0.0203	0.0062	0.0525	0.0692
From	Mar. 2012		G1	G2	G3	G4	G5	G6	G7	G8	G9	G10
To	Mar. 2013		G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
	Total		0.8597	0.9532	0.9540	0.9263	0.7877	0.9039	0.9032	0.9054	0.8357	0.8280
C	Urban		0.9251	0.9896	0.9874	0.9741	1.1404	0.9586	0.9697	1.0832	1.0406	0.8259
	Rural		0.8434	0.9432	0.9444	0.9120	0.7166	0.8764	0.8660	0.7940	0.6530	0.8312
	U-R		0.0817	0.0464	0.0430	0.0622	0.4238	0.0822	0.1036	0.2892	0.3876	−0.0053

The differences in the transition rates between the urban and rural areas were great for the transition from G5 to G6 and from G9 to G10 when students proceed to upper-level schools. This signified that there were limited educational opportunities to attend middle and high schools in the rural area. Unlike other grades, the transition rate from G10 to G11 was large in the rural area. The reason is that the repetition rate is greater in the rural areas at G11 as shown in Figure 1 and Table 2. This may be because students in the rural areas are not adequately prepared for the Matriculation Examination. There was no such phenomena for other grades in terms of repetition rates.

To make the issue clearer, Table 2 shows the repetition rates, dropout rates, and progress rates from March 2012 to September 2012 instead of transition rates. The dropout rate at the primary and middle school levels is rather low and the promotion rate is almost equal to the

transition rate in Table 1. The dropout rate signifies an outflow from an educational system, and the minus in the dropout means an inflow to an educational system. When the dropout rate is minus, the promotion rate is more than 1.0 in Table 2. The interpretation of this phenomena is the same as described above.

Table 2 Repetition, Dropout, and Promotion Rates (from March 2012 to September 2012)

Grade / Rate	From / To	G1 G2	G2 G3	G3 G4	G4 G5	G5 G6	G6 G7	G7 G8	G8 G9	G9 G10	G10 G11	G11
Repetion	Total	0.0038	0.0027	0.0022	0.0015	0.0013	0.0018	0.0015	0.0020	0.0142	0.0285	0.0467
	Urban	0.0031	0.0018	0.0015	0.0012	0.0008	0.0019	0.0015	0.0017	0.0151	0.0288	0.0319
	Rural	0.0040	0.0029	0.0024	0.0016	0.0014	0.0017	0.0014	0.0022	0.0134	0.0280	0.0731
Dropout	Total	0.1212	0.0312	0.0297	0.0556	0.1670	0.0811	0.0814	0.0842	0.1503	0.1551	
	Urban	0.0368	−0.0215	−0.0172	−0.0118	−0.1598	0.0333	0.0261	−0.0899	−0.0299	0.1700	
	Rural	0.1422	0.0456	0.0432	0.0759	0.2706	0.1050	0.1123	0.1932	0.3109	0.1315	
Promotion	Total	0.8749	0.9661	0.9681	0.9428	0.8317	0.9172	0.9171	0.9138	0.8355	0.8165	
	Urban	0.9601	1.0196	1.0158	1.0105	1.1591	0.9649	0.9724	1.0882	1.0148	0.8012	
	Rural	0.8538	0.9515	0.9545	0.9225	0.7280	0.8933	0.8862	0.8045	0.6756	0.8405	

As the transition rate (B) from September 2012 to March 2013 in Table 1 did not relate to the repetition, it showed the exact value of the promotion/progress rate. From the "Total" column in Table 1, it is clear that the transition rates for (B) is higher than the transition rates for (A). That meant the number of dropouts during this six month period was lower compared with the number of dropouts between consecutive academic years. The transition rate was higher in the rural area at the primary school level. The transition rate became higher for urban areas after G6. As this period (from September to March) was not related to the promotion to an upper grade, the tendency toward a dropout rate was not observed for G5 or G9.

When the transition rate (A) and the transition rate (B) were multiplied, the transition rate (C) was obtained. It is clear that the differences between the urban and rural areas at the primary school level were lower compared to the transition rates from March 2012 to September 2012. The reason is that the trend in the transition rates in the urban and rural areas from March 2012 to September 2012 and the trend from September 2012 to March 2013 were opposite; thus, the transition rate from March 2012 to March 2013 was modified because the tendency was offset by multiplying the opposite trends.

It is also important to point out that the number of dropouts from G2 and above can be estimated by comparing the data for March 2012 and March 2013, but the dropout at the G1 level from September to the following March cannot be estimated by the data for March 2012 and March 2013. Actually, the repetition rate from September 2012 to March 2013 was 3.45%, and the number was 45,743. This kind of value was not calculated in the previous study because much

of the study used the data for March, the end of the academic year. Therefore, the previous estimates were underestimated. It is also necessary to use the data at the beginning or the middle of the academic year to calculate the dropout rate exactly.

3.2 Transition rates by state/ region

Similar calculations can be conducted by state/ region. The results are shown in a graph for easy understanding. The number of G1 students in September was set as the base. Some students dropped out during the academic year and the rest progressed to the end of the academic year in March. The transition rate from September to March was calculated. Some of the G1 students moved up to G2 in the following academic year. The G2 students consisted of those who were promoted and those who were repeating G2, and also a few new entrants who may have arrived from another educational system or who may have re-entered after a break.

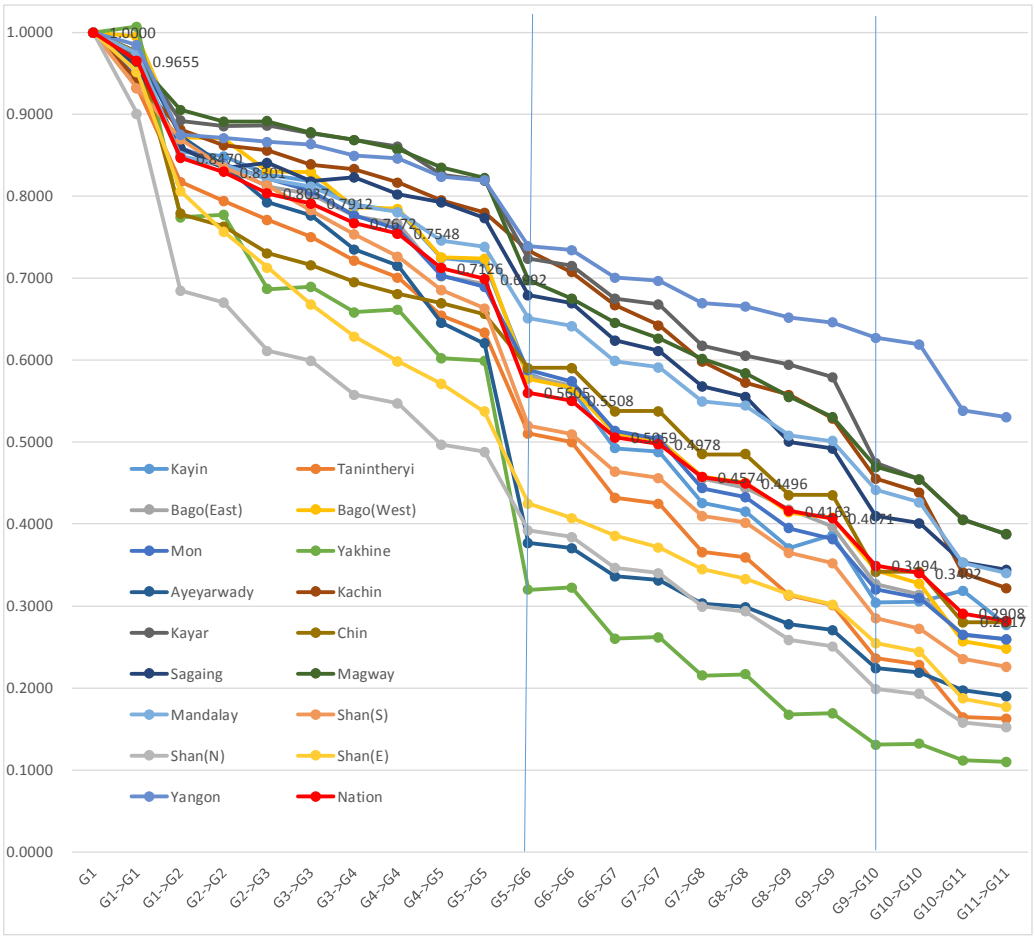

Figure 2 Expected Value Based on Cumulative Transition Rates
(Urban+Rural, from March 2012 to March 2013)
Note: NaiPyiTaw is included in Mandalay.

The next transition rate, which was defined as the ratio of G2 students divided by G1 students from the previous academic year, signified the expected rate of G2 students when the number of G1 students is known. The same calculations were made for the other grades. Then the cumulative transition rates were calculated by multiplying the consecutive transition rates up to G11. The cumulative transition rates showed that the expected rate of initial G1 students survived to a certain level. Figure 2 shows the cumulative transition rates from G1 to G11 by state/region.

There was a diversity among the states/regions. For example, the drop was large from G1 to G2 in some states/regions (transition rate was less than 0.8 in Shan (N), Yakhine and Chin); the drop was large from G5 to G6 in some states/regions (transition rate was less than 0.6 in Yakhine and Ayeyawady); and the drop was large from G9 to G10 in some states/regions (transition rate was less than 0.8 in Yakhine, Tanintheryi, Chin, Kayin and Shan(N)). As shown in Figure 2, the transition rates from September 2012 to March 2013 exceeded 1.0 except for G5 and G11 for the total urban and rural areas in Yakhine. This may not be due to an inflow from other states/regions, but an inflow from other schools.

Table 3 Expected Values of Achievement and Enrollment
(Urban+Rural, from March 2012 to March 2013)

State/Region	G11 achievement rate	Total enrollment rate
Kayin	0.2769	0.6014
Tanintheryi	0.1625	0.5332
Bago(East)	0.2592	0.6006
Bago(West)	0.2486	0.6124
Mon	0.2592	0.5981
Yakhine	0.1102	0.4439
Ayeyarwady	0.1898	0.5131
Kachin	0.3219	0.6911
Kayar	0.3876	0.7189
Chin	0.2800	0.5890
Sagaing	0.3439	0.6687
Magway	0.3883	0.7075
Mandalay	0.3403	0.6585
Shan(S)	0.2257	0.5689
Shan(N)	0.1523	0.4405
Shan(E)	0.1774	0.4949
Yangon	0.5306	0.7552
Nation	0.2817	0.6018

Note: NaiPyiTaw is included in Mandalay.

In summary, the cumulative transition rate for the G11 level showed the expected value of students who achieved G11 from G1. As shown in Table 3, the national average was 0.2817. It was 0.5306 in Yangon; and more than half of the G1 students are expected to reach G11, but the

value was 0.1102 in Yakhine. The disparity among states/regions was large.

There is one more indicator which shows the overall enrollment situation. If Figure 2 is made square and the total size is 1.0, the area under the sequential line will show the rate of actual total enrollment among possible enrollment between G1 and G11. The rest is the rate for the number of students left among the possible enrollees. The total enrollment rate is 0.6018 nationwide. That means 60.18% of the possible enrollees actually stay at school, and will remain until G11 if the rest of the 39.82% stay. It implies that the number of basic school students may increase roughly up to (1.0/ 0.6018=1.66) times over the long run if the number of G1 students and the educational cycle remains the same in future. The highest value is 0.7552 in Yangon, and the lowest value is 0.4439 in Yakhine. In general, the G11 achievement rate and the total enrollment rate are highly correlated; and total enrollment is high when the transition rate for the lower grades is high even if the G11 achievement rates are the same.

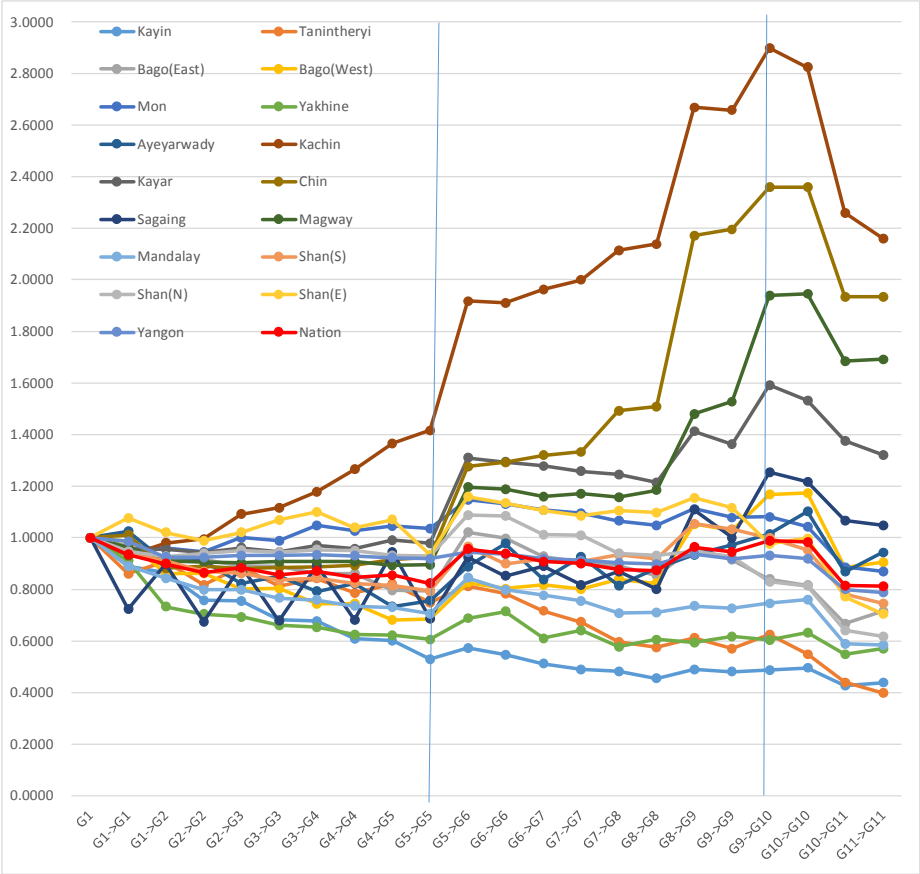

Figure 3 Expected Value Based on Cumulative Transition Rates
(Urban area; from March 2012 to March 2013)

Figure 3 and Figure 4 show the breakdown of Figure 2 into urban and rural areas. The

situation in Figure 3 differed from Figure 2 and Figure 4. In contrast to general expectation, the cumulative transition rates increased yearly up to G10 in some states/regions such as Kachin, Chin, Magway, and Kayar. Even for the national average, the rate changed slightly along with the progression in grade. This was because the better and upper schools were unevenly located in the urban areas, and the migration of students from the rural to urban areas continued.

The situation in Figure 4 appeared to be a downward distribution of Figure 2. What was notable was the sharp drop from G5 to G6 and G9 to G10. It is clear that the reason is the limitation of middle and high schools in rural area. The shape of the line for Shan(N) and Shan(E) are different from the rest. This was due to problems encountered in the transition from G1 to G2. A study to solve the difficulties including language of instruction at the G1 level and the problem of adaptability are needed.

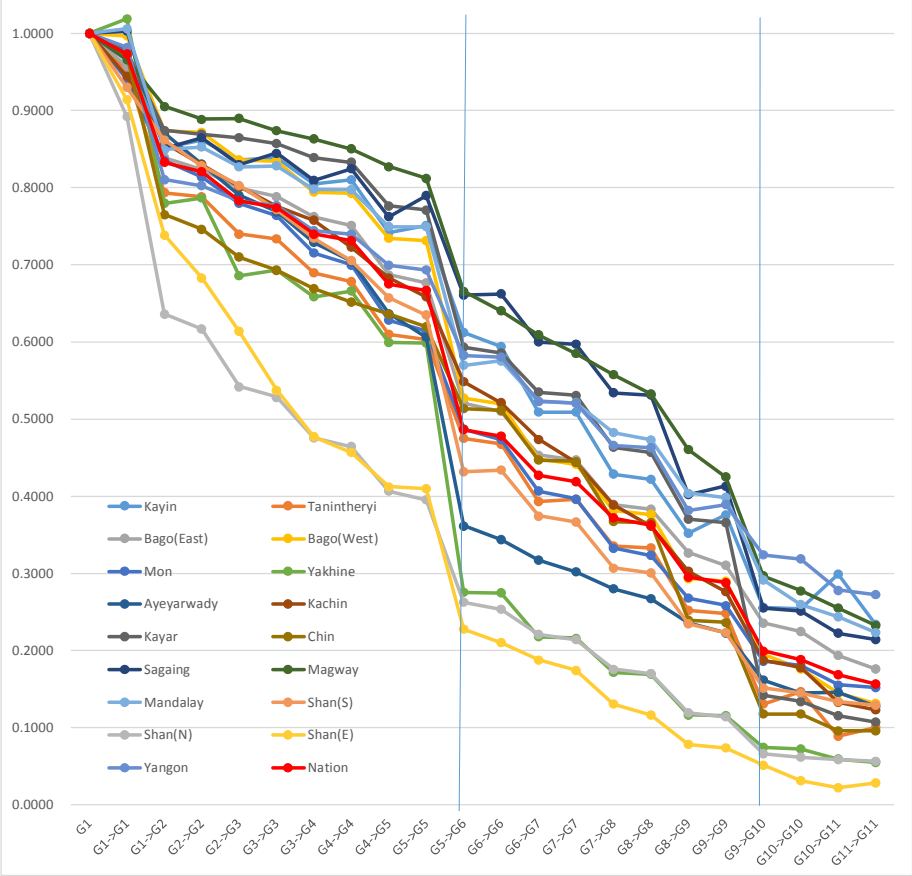

Figure 4 Expected Value Based on Cumulative Transition Rates
(Rural area, from March 2012 to March 2013)

3.3 Time-series analysis of the cumulative transition rates

The previous analysis used the data from the middle of the academic year, but this kind of data is not always available. If the base data is set at the end of academic year, the trend in the time series data can be analyzed. Table 4 and Figure 5 show the nationwide time trend of transition rates. As mentioned earlier, the cumulative transition rates were calculated higher when the base data was set at March, the end of academic year, because students who were dropped out in G1 during the academic year was not considered. It was 3.45% in 2012. The values in Table 3 were calculated based on the data taken in March. The G11 achievement rate and the total enrolment in 2013 were 0.3032 and 0.6254, respectively. This was why they were higher than the values of 0.2817 and 0.6018 in Table 2.

Table 4 Cumulative Transition Rates by Academic Year and Grade (nationwide)

Transition	G1->G2	G2->G3	G3->G4	G4->G5	G5->G6	G6->G7	G7->G8	G8->G9	G9->G10	G10->G11	
2012->2013	0.8597	0.9532	0.9540	0.9263	0.8186	0.9039	0.9032	0.9054	0.8357	0.8280	
2011->2012	0.8731	0.9477	0.9398	0.9294	0.7938	0.9137	0.9024	0.8915	0.8335	0.8367	
2010->2011	0.8811	0.9460	0.9410	0.9324	0.7695	0.8999	0.8937	0.8752	0.8228	0.8312	
2009->2010	0.8881	0.9521	0.9527	0.9297	0.7580	0.9051	0.8955	0.8740	0.8244	0.8890	
2008->2009	0.8591	0.9407	0.9376	0.9275	0.7240	0.8765	0.8812	0.8643	0.8287	0.9150	
Accumulation	G1->G2	G2->G3	G3->G4	G4->G5	G5->G6	G6->G7	G7->G8	G8->G9	G9->G10	G10->G11	Total enroll-ment rate
2012->2013	0.8597	0.8195	0.7818	0.7242	0.5928	0.5358	0.4839	0.4382	0.3662	0.3032	0.6254
2011->2012	0.8731	0.8274	0.7776	0.7227	0.5736	0.5242	0.4730	0.4217	0.3515	0.2941	0.6192
2010->2011	0.8811	0.8335	0.7843	0.7313	0.5627	0.5064	0.4525	0.3961	0.3259	0.2709	0.6109
2009->2010	0.8881	0.8456	0.8056	0.7490	0.5677	0.5138	0.4601	0.4021	0.3315	0.2947	0.6211
2008->2009	0.8591	0.8081	0.7577	0.7028	0.5088	0.4460	0.3930	0.3397	0.2815	0.2576	0.5726

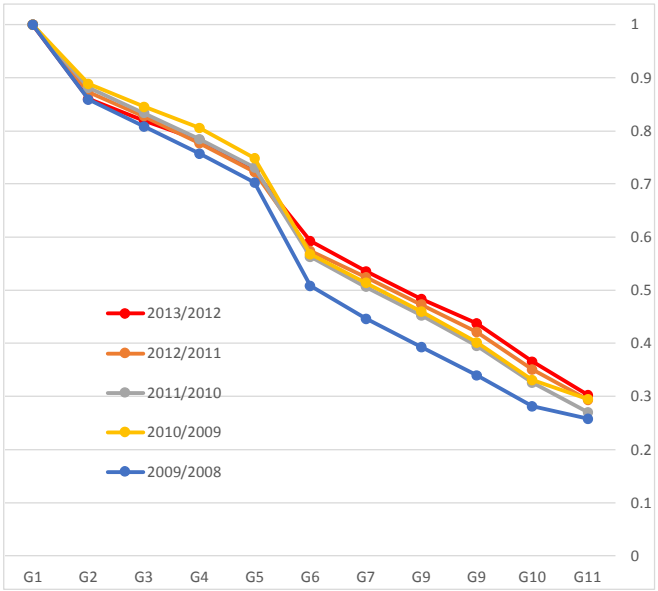

Figure 5 Time Series Trend of Cumulative Transition Rates (nationwide)

It is clear from Table 4 that the transition rate from G1 to G2 decreased in the past three-year period. The reason is not clear, but it is related to the fact that the number of G1 students is increasing. The declining trend affects the following cumulative transition rate; however, the cumulative transition rates in the upper grades were high in recent years because the transition rate from G5 to G6 improved remarkably.

3.4 Cumulative transition rate by urban and rural areas

Figure 6 shows the cumulative transition rate by urban and rural areas. There was a clear difference between the urban and rural areas. Although improvement was observed in the rural areas, the improvement in the urban areas was remarkable. When the transition rate from 2008 to 2009 was examined, the cumulative transition rate between the urban and rural areas did not differ greatly until G5. The difference appeared to start in the transition from G5 to G6 because of the migration of students from the rural to urban areas. However, the migration has started from an earlier stage recently and that makes the situation differ greatly.

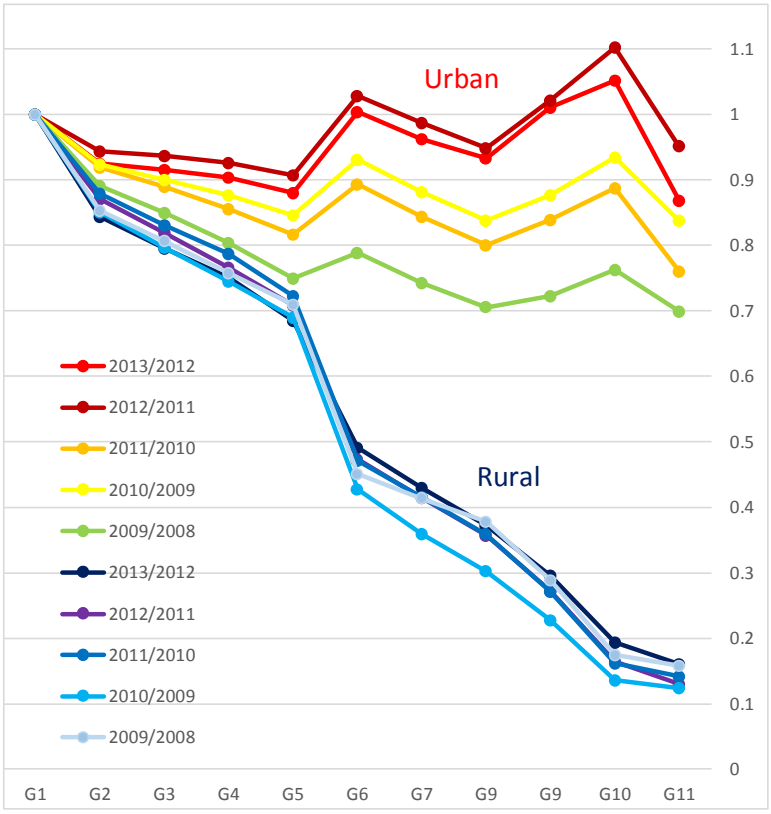

Figure 6 Time Trend of Cumulative Transition Rates (nationwide by urban and rural areas)

Table 5 shows the composition of students by grade and area in March 2013. It is surprising that only 19.2% of G1 students attend urban schools, but 33.5% of G6 students, 58.5% of G10 students and 61.1% of G11 students attend urban schools. It is crucial that the educational environment of rural schools, including establishing middle schools and high schools, are improved in order to increase the transition rate as a whole. All students must be able to reach G11 without having to migrate. Of course, it does not mean that the government has not done anything. Figure 7 shows the time series trend in the ratio of rural students by grade within the total. The situation has especially improved at the middle and high school levels. The government has established many post-primary schools, branch-middle schools, and branch-high schools in the rural areas. It seems to be effective, but there is still a lot of room for improvement.

Table 5 Composition of Students by Grade and Area (March 2013)

	G1	G2	G3	G4	G5	G1-5	G6	G7	G8	G9	G6-9	G10	G11	G10-11
Nation	1,281,437	1,036,879	984,237	947,016	890,063	5,139,632	714,440	627,260	552,047	477,114	2,370,861	373,167	295,889	669,056
Urban	0.1925	0.2142	0.2232	0.2308	0.2428	0.2185	0.3351	0.3540	0.3850	0.4608	0.3770	0.5868	0.6109	0.5975
Rural	0.8075	0.7858	0.7768	0.7692	0.7572	0.7815	0.6649	0.6460	0.6150	0.5392	0.6230	0.4132	0.3891	0.4025

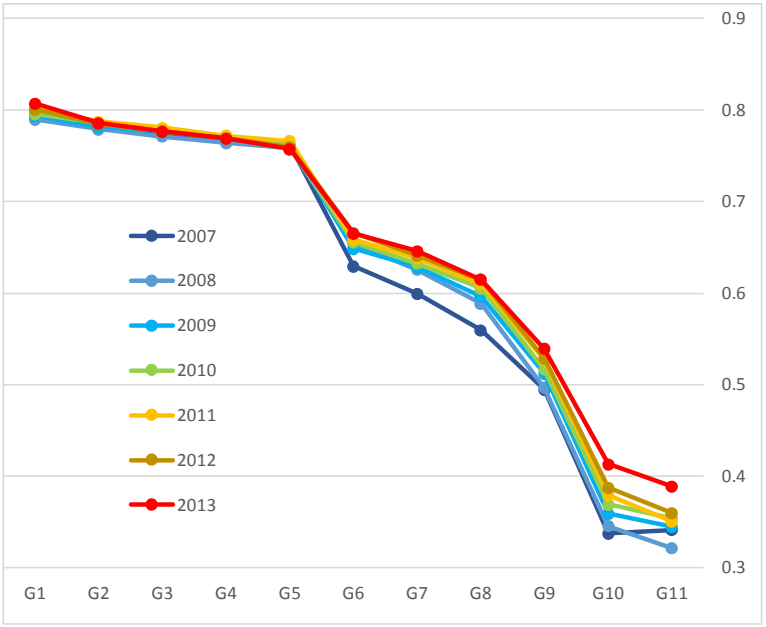

Figure 7 Time Series Trend in the Ratio of Rural Students by Grade within the Total

3.5 Cumulative transition rates by gender

Figure 8 shows the cumulative transition rate by gender. The data is from Education Statistics as of the end of the academic year (MOE, 2012; MOE, 2013) as in Figures 5 and 6. However, the number of students by gender was represented using the enrollment statistics in the

table on term-end examination results alone. The values should be equal to other tables such as the number of students by states, but this was not true. The national values of students were somewhat smaller than the values in other tables. That meant the transition rates calculated using this table were slightly higher than the values calculated using other tables because of the lower base line, but it was enough to see the trend and the difference.

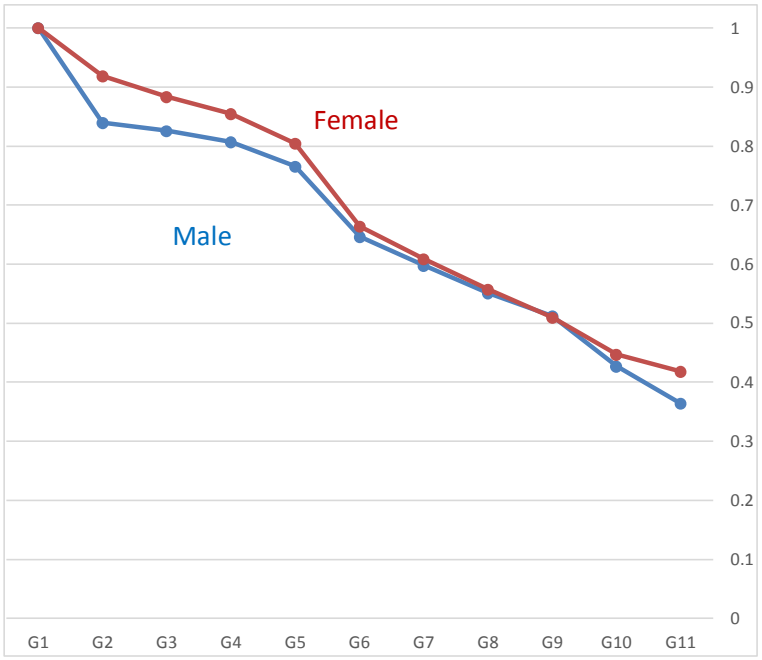

Figure 8 Cumulative Transition Rates by Gender
(Nationwide; from March, 2012 to March, 2013)

Firstly, there is a great difference between boys and girls during the transition from G1 to G2. There may be a general difference in social maturity between boys and girls. This difference in transition affected the following cumulative transition rates. The difference disappeared at the middle school level and it reversed at the high school level. This was because the achievement scores were generally higher for the girls rather than for the boys.

When the Gender Parity Index (GPI; number of girls/number of boys) was calculated by grade, it was 0.8554 for G1 in 2012 as shown in Table 6. The value changed to 0.9595 for G2, 1.0072 for G7, and 1.4831 for G11. The values changed to 0.9086 for G1, 1.0044 for G9 and 1.2045 for G11 in 2013. The data for March 2012 was especially notable, when the GPI from G1 to G2 was large. This may not be due to a higher enrollment rate of boys, but due to many boys re-entering G1, which resulted in a high ratio of boys in G1.

Table 6 Gender Parity Index by Grade (nationwide)

	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	G11
2012	0.8554	0.9595	0.9677	0.9774	0.9922	0.9892	1.0072	1.0221	1.0219	1.0949	1.4831
2013	0.9086	0.9364	0.9372	0.9576	0.9709	0.9701	0.9816	0.9986	1.0044	1.0754	1.2045

3.6 Appropriateness of the transition statistics

The discussion thus far presupposes that the transition rate was the opposite of the dropout rate because the repetition rate was small. But, there was also the argument that the repetition rate for G1 was as high as 12% based on the household survey (Spohr, 2014). Assuming that both data are correct, it can be interpreted that some of the dropouts defined in the Education Statistics re-entered G1. When the students move to another school, they have to submit a transfer certificate issued by the old school to the new school. Without the transfer certificate, there is no official proof that a student completed a certain grade. However, in the case of students re-entering G1, no certificate is required because they are starting from the beginning. This is dropping out and re-entering in a formal sense, but it may be repetition from the viewpoint of an individual student. It was greatly puzzling as to what these large number of students did after dropping out from G1, but re-entering seems to be the answer.

For example, the dropout rate during the promotion from G1 to G2 was 12.12%. It was quite high compared to the other dropout rates of 3.12% from G2 to G3 and 2.97% from G3 to G4. Assuming the true dropout rate from G1 to G2 was 3.12% same as the dropout rate from G2 to G3, the difference of 9.0% may actually be a repetition rate. As the repetition rate in 2012 was 0.38% shown in Table 2, the true repetition rate was estimated to be 9.38% (9.0+0.38) based on the enrollment in March.

As shown in Table 1, drop-outs from G1 occurred during the academic year too. When both 3.45% of dropouts during the academic year 2012 and 12.12% of dropouts at the time students were promoted to G2 were taken into account, the total dropout rate for G1 was calculated to be 15.15% (3.45+12.12*(1.0-0.0345)) based on the enrollment in September. The transition rate for G1 during the academic year 2012 was lower than the rates of other grades as shown in Table 1 (B), which means the dropout rate was higher. Assuming the true dropout rate for G1 was 2.0% same as the dropout rate for G2, the difference of 1.45% (3.45-2.00) may actually be a repetition rate. When both 1.45% and 9.38% were taken into account, the total repetition rate based on the enrollment in September was calculated to be 10.64% (1.45+9.38*(1.0-0.02)). Thus, if some of the students re-entered G1, it is possible that the actual repetition rate was about 10%. If this actual repetition rate differs by gender, explaining Table 6 becomes easier.

If this is true, the number of G1 students is inflated in a sense. The number of G1 students has increased recently (Muta, 2014c), but it is important to know if this increment comes from a

real increase in the population or if they are repeaters. The number of G1 students is the simulation base used to calculate the future demand of teachers, facilities, and budget. If the number of G1 students is inflated by repeaters, the simulation results may be overestimated because repeaters will decrease in future along with an improvement in educational conditions. This issue will be clarified after the publication of new census data.

Is there any data to make the issue clearer at this moment? There were age distribution tables for the Yangon region in March 2009 and March 2013 as shown in Table 7. The percentage of five-year-old students among G1 students was 86.74% in 2009 and 75.80% in 2013. The remainder were students older than six-years of age. Even if the repetition rate was about 10%, it would explain this age distribution.

Table 7 Age Distribution of Students by Grade (Yangon Region %)

2009	Urban+Rural		Age 5	Age 6	Age 7	Age 8	Age 9	Age10	Age 11	Age 12	Age 13	Age 14	Age 15	Age 16	Age 17	Age 18	Age 19
	Total	991,348	12.07	11.52	10.80	10.59	9.80	7.78	7.78	7.27	7.07	6.80	6.11	1.72	0.48	0.15	0.07
Primary	G-1	137,957	86.74	11.33	1.63	0.25	0.05	0.01									
	G-2	114,766		85.88	11.51	2.23	0.29	0.08	0.01								
	G-3	107,683			84.98	12.33	2.19	0.40	0.09	0.01	0.01						
	G-4	104,172			0.05	85.11	11.97	2.40	0.37	0.08	0.02						
	G-5	96,396				0.16	84.66	12.45	2.26	0.36	0.09	0.01					
Middle	G-6	84,294					0.41	73.21	20.41	4.72	0.92	0.26	0.06	0.01			
	G-7	76,578						0.53	73.57	19.89	4.75	0.93	0.27	0.05	0.01		
	G-8	72,137							1.24	71.98	20.57	4.89	1.01	0.24	0.05	0.01	0.00
	G-9	68,842								0.79	72.12	20.35	5.14	1.17	0.33	0.05	0.05
High	G-10	68,152									1.57	69.90	21.02	5.64	1.31	0.33	0.22
	G-11	60,371										2.07	69.03	20.25	5.92	1.95	0.78
2013	Urban+Rural		Age 5	Age 6	Age 7	Age 8	Age 9	Age10	Age 11	Age 12	Age 13	Age 14	Age 15	Age 16	Age 17	Age 18	Age 19
	Total	1,021,289	9.52	10.78	10.30	10.31	10.29	9.18	8.57	8.57	7.22	6.53	5.83	2.29	0.52	0.07	0.02
Primary	G-1	128,325	75.80	22.29	1.52	0.26	0.10	0.02	0.01								
	G-2	109,543		74.17	21.89	2.79	1.02	0.09	0.02	0.01							
	G-3	108,403		0.27	73.06	22.05	3.11	1.06	0.43	0.02	0.01						
	G-4	106,427			0.02	73.24	22.11	2.96	1.10	0.54	0.02						
	G-5	105,152				0.05	73.18	21.54	3.33	1.29	0.60	0.01					
Middle	G-6	94,710						70.08	22.70	5.26	1.37	0.59	0.01				
	G-7	86,034						0.35	68.78	24.02	5.42	1.24	0.18	0.02			
	G-8	82,156							2.02	70.32	21.71	4.62	1.20	0.11	0.01		
	G-9	76,707								2.73	64.24	27.15	4.92	0.77	0.18	0.02	
High	G-10	68,448										58.98	32.07	7.85	0.92	0.13	0.04
	G-11	55,384										0.16	59.03	31.19	8.25	1.13	0.24

The percentage for these standard age students decreased for the upper grades. It notably decreased at G6 and G10, where a new stage of education began. Two interpretations were possible as to the reasons. One interpretation was that the percentage of students who entered G1 at the standard age was increasing. Under a condition that the enrollment rate is high and it is becoming higher year by year, the stock of over-age students decreases, and the percentage of regular age among new entrants increases. The other interpretation is that the initial age structure is same among new entrants, but the age structure changes because of dropouts among young students or increase of repeaters.

Let's make a simulation using the number of G1 students in March 2009. The number of students and repeaters by grade are known. For example, the number of G2 students in 2010

consisted of repeaters from G2 in 2009 and those promoted from G1 in 2010. The number of dropouts from G1 between 2009 and 2010 was calculated by subtracting G2 students in 2010 from G1 students in 2009 and adding the repeaters of G2 students in 2009. The repeaters in 2009 should be seven years of age or older. Then, under the assumption that dropouts occur equally in all ages, six-year-old students among the G2 students in 2010 were calculated. When this idea is continued, the ratio of nine-year-olds among the G5 students can be calculated. The result was 86.30%. This did not differ from the rate of 86.74% for five-year-olds in 2009. This was because the number of dropouts that raise the average age higher was originally small, as well as the assumption that dropouts occur equally for all ages.

The next assumption was that dropouts occurred in the youngest age group. If the older students were more mature and highly likely to adapt, then the assumption is not strange. Under this assumption, the rate of nine-year-old students among the G5 students in 2009 may have been 82.06%. It is lower than the rate of 84.66% for five-year-olds among the students in 2009. This implies that the values in Table 6 are self-explanatory if the dropouts tend to occur within the lower age group even if the age structure of G1 entrants is same.

This idea is not adequate to explain why the percentage of regular students become smaller, at greater than the 10% point when middle-school level is reached as shown in Table 6. When the number of G6 students in 2014 was estimated using G6 students in 2013, and the same methodology was applied, the percentage of 10-year-olds does not fall below 80.03%.

When the data of 2009 and 2013 are compared, it cannot be said that the difference in the percentage of regular students stems from the original difference at the time of entrance because the majority of G1 students in 2009 should be G5 students in 2013.

The above interpretation can be applied to explain the change from 86.74% at the G1 level in 2009 to 82.06% at G5 level, but a separate interpretation is needed to explain the drop in value to 73.18% in 2013. One possible interpretation is that there is a large outflow of young students as well as a large inflow of older students. Another contributing factor may be the unique situation at Yangon Region that allows an easy inflow of students from other regions.

Any information about the age structure for G1, G2, G3, and G4 in 2013 was not given in the 2009 data. It is possible that repeaters have increased in recent years contributing to a rise in the ratio of overage students, but there is not enough evidence to prove this at the moment.

4. Conclusion

It is necessary to decrease the number of dropouts at each grade, to prevent repetitions, and to make students graduate from schools during the regular, standard period in order to achieve complete enrollment in compulsory education. The majority of the studies on dropouts in

Myanmar use the Education Statistics taken in March due to the limited data. Dropouts can be calculated by subtracting the number of students in a certain grade from the number of students in the grade that was one year lower in the previous year after subtracting the number of repeaters. However, this figure only shows the dropouts between two academic years; and the dropouts during an academic year are not included for G1 students. Thus, the dropouts during an academic year were also taken into account in this paper. The dropout rate in G1 from September 2012 to March 2013 was calculated as 3.45% or 45,743 students. This figure has not been included in the dropout count up to now, and it cannot be ignored. Although these dropouts remained in school for only a short period of time, they are in need of precious educational resources.

The transition rates of students were calculated for each half year, from March to September (between consecutive grades), and September to the following March (between same grades). These transition rates were multiplied one by one, and then the cumulative transition rates were calculated. The cumulative transition rate showed the expected gross survival rate of G1 students at each grade. The number of students as of September 2012 was used as a base line. The expected value for these students to achieve G11 was calculated as 0.2817. This was lower than previous estimates (Muta, 2014a; 2014c) because the baseline was set as the middle of the academic year. There was a great difference between states/regions, but the difference was remarkable between the urban and rural areas. It appears that the migration of students from rural to urban areas is popular. Educational development in rural areas should be enhanced to give students access to better education.

An in-depth survey on dropouts is needed. If the real situation on dropouts is made clear, a better educational policy on prevention can be established. There is a possibility that about 10% of dropouts from G1 actually re-enter primary schools, although this is not clearly reflected in the current statistics. Of course, it is better to repeat a grade than to dropout permanently. In contrast, if the number of G1 students includes many repeaters, it means that this number is inflated. The number of G1 students provides the base line in the simulation to calculate the future demand of teachers, facilities, and budget. If the number of G1 students is inflated by repeaters, the results of the simulation may be overestimated because the repeaters will decrease in future, which will be affected by improvement of the educational condition.

Current educational statistics is a collection of static statistics and not dynamic statistics. It is important to obtain the dynamic statistics, which shows the migration of students. The movement of students occurs at the regional level. It is important to know what is happening in a region to make an accurate educational plan for the future. For example, it will greatly help to collect data at the beginning of the academic year on a breakdown on the number of students, such as students who are promoted from same school, promoted from another school, repeaters from same school, or repeaters from another school, etc. It is suggested that there may be a large

number of transferred students. There are well-kept records on transferred students at the schools, and any sample survey will provide the real picture about student migration.

Reference

Spohr, Chris A. (2014) *The Who, What, Where, & Why of Education Access in Myanmar – Answers from Household Survey Data*, Handout of CESR Inter-team Sharing Session, CESR Office.

MOE: Ministry of Education, Department of Education Planning and Training (2012) *Statistical Yearbook Number of Schools, Teachers and Students Population*.

MOE: Ministry of Education, Department of Education Planning and Training (2013) *Statistical Yearbook Number of Schools, Teachers and Students Population*.

Muta, Hiromitsu (2014a) *Study on the Future Expansion of Education due to Reduced Dropouts, 20140211*

Muta, Hiromitsu (2014b) *Regional Difference on Expansion of Education and Estimation of Total Cost Necessary in Future, 20140525.*

Muta, Hiromitsu (2014c) *Trend Analysis on the Number of Students in Basic Education, 20140801.*