Calculating effective interest rates on foreign currency loans

December 2015

Ghana

Between 2004 and 2013[1] Ghana was lent $2.83 billion by the IDA of the World Bank. Based on individual exchange rates in each year, this was the equivalent of GH₵3.76 billion.

These loans are due to be repaid between 2015 and 2053 under the IDA's usual terms of a 10-year grace period followed by a 30-year repayment period with a 0.75% interest rate on the dollar amount (known as a service charge).[2] Over this time Ghana will repay $3.39 billion, but based on the September 2015 Cedi exchange rate,[3] this will be GH₵12.8 billion.

This means Ghana would pay GH₵9.04 billion more to the IDA than it received, based on the September 2015 exchange rate. If the original loans had been made in Cedi's, and all the other terms of the loans were the same, then for this amount to be paid would have required an annual interest rate of 9%.

This means exchange rate changes mean that the effective interest rate on IDA loans to Ghana from 2004 to 2013 will currently be 9% over the lifetime of the loans. If the exchange rate falls further it will be higher, if it recovers it will be less.

Ghana issued a 10-year $750 million bond in 2013 at 8% interest rate (1,510 million Cedi's). This implied total payments in dollar over the course of the loan of $1,350 million. With exchange rates in 2014 and 2015, and assuming the exchange rate remains the same, total payments in Cedi's will now be 5,570 million Cedi's. If the loan had been given in Cedi's, for this amount to be paid would have meant an interest rate originally of 27%.

Malawi

Between 2004 and 2013[4] Malawi was lent $416 million by the IDA of the World Bank. Based on individual exchange rates in each year, this was the equivalent of MWK79 billion.

These loans are due to be repaid between 2015 and 2053 under the IDA's usual terms of a 10-year grace period followed by a 30-year repayment period, with a 0.75% interest rate on the dollar amount (known as a service charge).[5] Over this time Malawi will repay $500 million, but based on the September 2015 Malawian Kwacha exchange rate,[6] this will be MWK270 billion.

This means Malawi would pay MWK191 billion more to the IDA than it received, based on the September 2015 exchange rate. If the original loans had been made in Malawian

[1] Loans prior to 2004 should have been cancelled under the MDRI. 2013 is the latest year with information on IDA disbursements in the World Bank database.

[2] Split into two periods of repaying 2% a year for the first 10 years, then 4% a year for the final 20 years.

[3] And for payments before 2015, the exchange rate for the relevant year

[4] Loans prior to 2004 should have been cancelled under the MDRI. 2013 is the latest year with information on IDA disbursements in the World Bank database.

[5] Split into two periods of repaying 2% a year for the first 10 years, then 4% a year for the final 20 years.

[6] And for payments before 2015, the exchange rate for the relevant year

Kwacha, and all the other terms of the loans were the same, then for this amount to be paid would have required an annual interest rate of 9.1%.

This means exchange rate changes mean that the effective average interest rate on IDA loans to Malawi from 2004 to 2013 will currently be 8% over the lifetime of the loans. If the exchange rate falls further it will be higher, if it recovers it will be less.

Zambia

Between 2004 and 2013 Zambia was lent $639 million by the IDA of the World Bank. Based on individual exchange rates in each year, this was the equivalent of ZMW2.92 billion.

These loans are due to be repaid between 2015 and 2053 under the IDA's usual terms of a 10-year grace period followed by a 30-year repayment period with a 0.75% interest rate on the dollar amount (known as a service charge).[7] Over this time Zambia will repay $766 million, but based on the September 2015 Kwacha exchange rate,[8] this will be ZMW7.43 billion.

This means Zambia will pay ZMW4.51 billion more to the IDA than it received based on the September 2015 exchange rate. If the original loans had been made in Kwacha, and all the other terms of the loans were the same, then for this amount to be paid would have required an annual interest rate of 5.8%.

This means exchange rate changes mean that the effective average interest rate on IDA loans to Zambia from 2004 to 2013 will currently be 5.8% over the lifetime of the loans. If the exchange rate falls further it will be higher, if it recovers it will be less.

Zambia issued a 10-year $1 billion bond in April 2014 at 8.625% interest rate (6.1 billion kwacha). This implied total payments in dollar over the course of the loan of $1.86 billion. With exchange rates in 2014 and 2015, and assuming the exchange rate remains the same, total payments in Kwacha's will now be 22 billion kwacha's. If the loan had been given in kwacha's, for this amount to be paid would have meant an interest rate originally of 26%.

Mozambique

Between 2004 and 2013[9] Mozambique was lent $2.19 billion by the IDA of the World Bank. Based on individual exchange rates in each year, this was the equivalent of MET59 billion.

These loans are due to be repaid between 2015 and 2053 under the IDA's usual terms of a 10-year grace period followed by a 30-year repayment period with a 0.75% interest rate on the dollar amount (known as a service charge).[10] Over this time Mozambique will repay $2.62 billion, but based on the September 2015 Kwacha exchange rate,[11] this will be MET109 billion.

This means Mozambique will pay MET50 billion more to the IDA than it received based on the September 2015 exchange rate. If the original loans had been made in Meticals, and all the other terms of the loans were the same, then for this amount to be paid would have required an annual interest rate of 3.8%.

---

[7] Split into two periods of repaying 2% a year for the first 10 years, then 4% a year for the final 20 years.

[8] And for payments before 2015, the exchange rate for the relevant year

[9] 2007 was chosen as the first year of the latest version of the Ghanaian Cedi. 2013 is the latest year with information on IDA disbursements in the World Bank database.

[10] Split into two periods of repaying 2% a year for the first 10 years, then 4% a year for the final 20 years.

[11] And for payments before 2015, the exchange rate for the relevant year

This means exchange rate changes mean that the effective average interest rate on IDA loans to Mozambique from 2004 to 2013 will currently be 3.8% over the lifetime of the loans. If the exchange rate falls further it will be higher, if it recovers it will be less.

Mozambique issued a 7-year $500 million bond in September 2013 at 8.5% interest rate (14.8 billion meticals). This implied total payments in dollar over the course of the loan of $797 million. With exchange rates in 2014 and 2015, and assuming the exchange rate remains the same until 2020, total payments in Metical's will now be 34.3 billion Meticals. If the loan had been given in Meticals, for this amount to be paid would have meant an interest rate originally of 19%.