# Loan Project II – A Look at India


**SUBMITTED BY:** Nina Hoe, University of Pennsylvania


**SUBJECT(S):** Computation

**GRADE LEVEL(S):** 9, 10, 11, 12

## OVERVIEW:

In this lesson, students apply what they have learned about mortgage loans, personal loans and payday loans to examine different loan situations in India. Students start by reading articles about lending and interest rates in India. They then calculate interest and payments of mortgage and personal loans in India using interest rates provided.

## NBEA STANDARD(S):

- Computation, I. Mathematical Foundations
- Computation, II. Number Relationships and Operations
- Computation, III. Patterns, Functions, and Algebra
- Computation, IV. Measurements
- Computation, VI. Problem-Solving Applications

## RELATED ARTICLES:

- “The Economics of the Refugee Crisis: Paying Off Debts and Launching Startups”
- “Kiva: Improving People’s Lives One Small Loan at a Time”
- “Educator Toolkit: Tariffs and Trade”
- “China, the World Stage and Your Role as a Global Citizen”
- “Career Insight: Elvis Zhang on Making Cities Better”
- “A Student Draws Inspiration from the Dabbawalas of Mumbai”

**Common Core Standard(s):**

- A-SSE.1. Interpret expressions that represent a quantity in terms of its context
- RI.9-10.1. Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.
- SL.9-10.1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively.

**Objectives/Purposes:** Student will understand and compute interest rates and payments in the Indian context.

**Knowledge@Wharton Articles:**

- "Despite Growing Debt, the Indian Consumer Banks on Tomorrow"
- "Indian Real Estate Firms Face a Reality Check"
- "Risky Business: Are Teaser Rates for Home Loans Pushing Real Estate to the Edge?"

**Other Resources/Materials:**

- Calculators
- Student Worksheet

**Activity:**

*1. Whole Class Discussion: (10 mins)*

India is considered an Emerging Economy:

*"An emerging economy is a country that is not as rich as the United States or Canada, but is going through rapid economic growth because of changes in markets, technology, business culture and social practices. The four largest emerging economies in the world are commonly referred to as "the BRIC countries." They are Brazil, Russia, India and China."*

1. Are interest rates the same around the world?
2. What factors influence interest rates in the US?

3. How might these be related to interest rates internationally?
4. What do you know about the housing and job market in India?
5. How do you think interest rates in India compare to those in the US? Why?
6. What is the currency used in India?
7. What is the conversion to US dollars?

*2. Small Group/Pair Activity:* (*20 – 25 mins*)

Student Worksheet

In the article, "Indian Real Estate Firms Face a Reality Check ," the author states that "*First, the Reserve Bank of India (RBI) has been raising interest rates to tackle inflation. As a result, housing finance companies have had to raise rates on loans. In 2004, interest rates on housing loans were 7.75%; they have now gone up to 12.75% (in 2008).*"

Currently, the interest rate for a 15-year fixed mortgage in India is 14%

The Indian monetary unit is called a rupee. One US dollar ($) is equal to approximately 44 rupees (Rs.).

In India, monthly payments are referred to as **Equated Monthly Installments or (EMIs).**

1. A homebuyer in India wants to purchase a home for Rs. 1,760,000. He is able to put Rs. 356,000 as a down payment. Calculate:
    - The value of the house in US dollars.
    - The monthly payment on a 15-year fixed mortgage at the current rate of 14%. Report your answer in both rupees and dollars.
    - The monthly payment of a 15-year fixed mortgage in 2008. Report your answer in both rupees and dollars.
    - The monthly payment of a 15-year fixed mortgage in 2004. Report your answer in both rupees and dollars.
    - On the axes below, graph the increase in mortgage interest rate as a function of time.
    - Describe what has happened to mortgage rates in the past 7 years.
    - Calculate the percentage change in mortgage rates from 2004 to 2011.
2. Why do you think interest rates have increased in India over the past 7 years?

Below is an excerpt from the 2010 article: "Despite Growing Debt, the Indian Consumer Banks on Tomorrow"

*"At the Indian Banking Conclave (Bancon) in Mumbai on January 12, Reserve Bank of India (RBI) deputy governor Usha Thorat warned against what she considers risky mortgage lending practices. "In the area of housing loans, teaser rates are increasingly being offered, which is a cause for concern," she said. "I hope banks are ensuring that borrowers are well aware of the implications of such rates and the appraisal takes into account the repaying capacity of the borrowers when the rates become normal."*

*Teaser rates were introduced by banks last year to boost demand for housing finance in a slowing economy. The first off the block was the public sector State Bank of India (SBI) with its Easy Home Loan. Launched in January 2009, when home loans were on offer at interest rates between 8.5% and 11% depending on the amount and the tenor, SBI's rate was 8% for the first year and 8.5% for the next two years. After three years, the terms are highly confusing. According to SBI, the "interest rate after three years may be fixed or floating as per the borrower's choice at the time of sanction. If the floating rate option is chosen, then the rate will be 2.75% below SBAR. If fixed rate option is chosen, then the rate will be 1.25% below SBAR prevailing on the third anniversary date from the date of first disbursement, and shall have a reset frequency of five years from the third anniversary date of the loan. Fixed interest rate shall be subject to [a] force majeure clause."*

*"SBAR" refers to the State Bank Advance Rate or the Benchmark Prime Lending Rate. And what is the Prime Lending Rate? Beginning June 29, 2009, it was revised to 11.75% per annum; it depends on the RBI's rate and other factors. In other words, the borrowers' monthly payments or equated monthly installments (EMI) three years from now will depend on the SBAR at that time. Little wonder borrowers are befuddled, regardless of whether they opt for fixed or adjustable rate mortgages."*

3. What do you think a "teaser rate" is?

***(From Investopedia – "An initial rate on an adjustable-rate mortgage (ARM). This rate will typically be below the going market rate, and is used by lenders to entice borrowers to choose ARMs over traditional mortgages. The teaser rate will be in effect for only a few months, at which point the rate will gradually climb until it reaches the full indexed rate, which will be a static margin rate plus the floating rate index to which the mortgage is tied (usually the LIBOR index)."***

4. What happened to mortgage rates in 2009?

5. Redraw your graph from 3e with these new data.

6. What are the dangers of a teaser rate?

7. Are personal loan rates higher or lower than mortgage interest rates? Why?

8. Compute one year of monthly payments on a 1-year personal loan of Rs. 7,000 at an interest rate of 25.1%.

9. Compare this to a similar loan in the US with an APR of 13.6%.

10. Why do you think interest rates in India are higher than in the US.

In the Despite Growing Debt, the Indian Consumer Banks on Tomorrow article, the authors state that there previously was a social stigma against borrowing.

*"Where did that social stigma originate? According to Jagmohan Raju, a Wharton marketing professor who has worked on a project about Indian consumer finance with students at the Indian School of Business, its roots lie in India's traditional rural economy. "Rural interest rates were very high, and farmers associated debt with the risk that you could go out of business unless it rained. Most of the borrowing was for working capital — farmers borrowed to buy seeds, fertilizers and so on. Meanwhile, your income and ability to repay your loans depended on the rains. If you defaulted, you could lose your land." That high degree of risk and uncertainty, says Raju, led to the social stigma against taking on debt. It made the Indian middle-classes highly debt averse.*

*That is no longer so. Consumer attitudes have changed because of several other factors. Television and other media have opened the eyes of Indians to what's available. Earlier, it was urban Indians looking at London and Paris. Today, it's rural India eyeing Delhi and Mumbai."*

11. Why was there a social stigma against borrowing?

12. Find evidence in the article that the social stigma is dwindling.
***(The article stated that there has been a 40% rise in personal loans from 2005 – 2009.)***

13. How do you think interest rates affect this?

14. Reflect on why people borrow?

15. Based on what you know about India, do you think that payday loans are common? Why or why not?

16. What are the barriers to getting bank loans?

17. How do loans in India relate to other types of loans offered in the United States?

**Tying It All Together:**

Whole Class Discussion (*10 mins*)

1. Have students share their answers.
2. Why is it important to understand the happenings in other countries?
3. What are the implications of higher interest rates on a global level?