the early 1980s most rates were in the 20%+ range.

Rates were high because inflation was high.

One way to deal with inflation is to change a high interest rate.

The problem with this approach is that people can not afford the payments. Over time their income should increase, so they can afford to increase payments over time.

One approach is to use a 6PM. Problems with 6PM include that the lenders is still unsure of the long term rate to charge.

A better solution, especially when the rate of inflation is uncertain is a Price Level Adjusted Mortgage (PLAM)

On a PLAM, a real interest rate is charged, but the principle balance is adjusted periodically to reflect inflation. The payment is adjusted
Page 143 #1

Interest Rate - 11%  Term 30 yr 6 % per yr
Note Amount 95,000 Inflation 10% per yr

[Amount disbursed: 94 x 95,000 = 8,736]

Payments & Balances is adjusted annually.

a) Compute monthly PMTs for first 5 yr.
PMT1( PV 95,000 N 360, I 11% 4)

\[ \text{PMT1} = \frac{95,000}{11\%} \]

93,327.7

This balance is adjusted upwards to reflect inflation i.e. multiply by
1.06. New Balance

\[ 1.06 \times 93,327.7 = 98,926.69 \]

PMT2( PV 98,926.69 N 360, I 11% 4)

Note Term is now 29 yr 348 mo

4,307.6

\[ \text{PMT2} = \frac{98,926.69}{11\%} \]

97,081.05

Increase for inflation \( \times 106 \)

102,305.9

PMT3( PV 102,305.9 N 336, I 11% 4)


\( P_{\text{AL} 12} \left[ \text{in T } 2 \right] \) 06 264.89

Increase by 6.5% 06 772.08

\( \text{PMT}_4 \left( \text{PV} = 06.922 \text{ 03 N 324 5/yr 4} \right) \)

5.40 3

\( \text{PMT}_4 \left( \text{PV} = 06.922 \text{ 03 N 324 5/yr 4} \right) \)

104 675.92

Increase by 6.7% 110 956.48

\( \text{PMT}_5 \left( \text{PV} = 0756.48 N 312 5/yr 4 \right) \)

- 572.59

\( \text{PMT}_5 \left( \text{PV} = 0756.48 N 312 5/yr 4 \right) \)

\( \text{BAL}_2 \left[ \text{out 2 } \right] \) 103 478.56

Increase by 6.9% 149 877.27
For a CPM, when inflation exists:

Actual PMT

Inflation Adjusted Payment

\[ \text{Yield to Lender } \text{pyr} = 12 \]

<table>
<thead>
<tr>
<th>CF_j</th>
<th>Ni</th>
<th>Months</th>
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</thead>
<tbody>
<tr>
<td>-89,300</td>
<td>12</td>
<td>0-12</td>
</tr>
<tr>
<td>563.54</td>
<td>12</td>
<td>13-24</td>
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<tr>
<td>490.76</td>
<td>12</td>
<td>25-36</td>
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<tr>
<td>509.60</td>
<td>12</td>
<td>37-48</td>
</tr>
<tr>
<td>540.18</td>
<td>12</td>
<td>49-59</td>
</tr>
<tr>
<td>572.59</td>
<td>11</td>
<td>60</td>
</tr>
<tr>
<td>115,559.86</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note:
\[ 572.59 + \frac{114,987.27}{115,559.86} \]

Center these CF' s for pyr 1 11
Note: If the lender had required this yield, and had projected you would stay 5 yr. We could compute the appropriate CPM. Assuming no points

\[
PMT \left( 0V \ 95800, \ N=360, \ I/Y=11 \right) \]

91261

In this case your payment would be doubled versus the PAM or in other words, you could only afford half the house

Rather than PAM's in the US and Canada, ARM's are the most common alternative to protect lenders from interest rate risk (which is primarily due to changing inflation rates). ARM's Adjustible Rate Mortgage. The payment adjusts periodically as interest rates change.
Common Features for ARMs

1. The interest rate is adjusted on some periodic basis by a specified rule.

The most popular ARM is one that is based on 1 Year Treasury Security Yields, with annual payment adjustments.

Another popular ARM is the COFI RPM (Cost of Funds Index). Most COFI ARM's have their interest rate adjusted monthly and their payment adjusted annually.

Most COFI ARMS have a payment limit when they adjust, commonly ±7.5%.

Most common COFI index is the 11th District Cost of Funds which is the average cost that thrifts pay to their depositors in the 11th district (which include CA).
Interest rates you are charged have 2 components:

1. Index of Treasury's or COFI

2. Spread or Margin above the index such as 2.75% above the index

Your actual rate on a Treasury is typically rounded to the nearest 1/8%. For COFI, read your loan document.

Other common indices are:
3. Year Treasury
3. Year Treasury
probably have payment adjust every 3 or 5 year.

and LIBOR [London Interbank Offer Rate]

LIBOR loans typically adjust both their rate and payment every 6 months.
2. How do payments change over time?
   As your interest rate changes, your payment will also change.
Some ARM’s restrict the payment change directly (e.g. COFI) by limiting interest rate changes (i.e. typically interest rate can only change 2% per year with a 5% lifetime ceiling).
Treasury indexed loans do not have the
VE amortization.
COFI loans typically allow VE amortization (also called positive accrual) if the payment cap makes the payment too small to amortize the loan.

3. TEASER - A low interest rate for the initial period of the loan. Because the loans often have an
Last week, I took the HST test.

My HST is 8%. Since I'm a 10th grader, I got a lower mark than usual. My reason was the tension to get a low score. So, why do people care about the period test? Isn't it just the same as the previous test? My dad thinks it's too stressful. During the test, I had a common cold. Although I tried to do my best, I couldn't perform well. Why can't you change the test the way you like it? I think I should practice more to improve my skills.
Loan: Amt = 75,000  %m = 15 yr
     2 Dist Loan Parts  PKR (2)

\[
PMT \left( PV = 75\,000, \ IYR = 9, \ N = 180 \right)
\]
\[
\begin{align*}
&760.70 \\
&\text{in INT} \ 12 \ \text{Amort} \Rightarrow \text{INT} \\
&\Rightarrow \text{Bal} \ 72,522.00
\end{align*}
\]

**Year 2 PMT**

\[
PMT_2 \left( PV = -72,522.00, \ IYR = 12, \ N = 168 \right)
\]
\[
893.04
\]

**Year 3 PMT**

\[
PMT_3 \left( PV = 70,392.43, \ IYR = 0, \ N = 56 \right)
\]
\[
807.00
\]

**Year 4 PMT**

\[
PMT_4 \left( PV = -67,610.48, \ IYR = 14, \ N = 144 \right)
\]
\[
971
\]

**Output**

**INT** RAL 6526974
YR 5 pmt
PMT₅ (PV - 6526974 IYR 1 N 324) = 633 66

For 2 years amort $2 900 18

Yield to Lender Calculation

<table>
<thead>
<tr>
<th>t</th>
<th>CFᵢ</th>
<th>Nᵢ</th>
</tr>
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<tbody>
<tr>
<td>0</td>
<td>-73 500*</td>
<td></td>
</tr>
<tr>
<td>1-12</td>
<td>760.70</td>
<td>12</td>
</tr>
<tr>
<td>13-24</td>
<td>893.04</td>
<td>12</td>
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<tr>
<td>25-36</td>
<td>808.00</td>
<td>12</td>
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<tr>
<td>37-48</td>
<td>971.65</td>
<td>12</td>
</tr>
<tr>
<td>49-59</td>
<td>1053.66</td>
<td>11</td>
</tr>
<tr>
<td>60</td>
<td>63 953.84**</td>
<td></td>
</tr>
</tbody>
</table>

Note: * 73 500 is the loan amount less discount points (ie 0.38% of 75 000)

** 63 953.84 + 2 900 18 + 632 66

Pallone's After Pmt + Pmt

Yield Yr 16 - 2.29 (Yield expressed as an APR)
For Federal Truth in Lending
for an Adjustable Rate Loan
use the payments if the
under does not change and
the loan is held to maturity
(then round to closest 1/4%)