A brief introduction of PMT, IPMT and **PPMT Excel** functions



MS Excel – PMT Function(WS, VBA)

- In Excel, the PMT function returns the payment amount for a loan based on an interest rate and a constant payment schedule.
- The syntax for the **PMT** function is:
- PMT(interest_rate, number_payments, PV, [FV], [Type])



- *interest_rate* is the interest rate for the loan.
- number_payments is the number of payments for the loan.
- *PV* is the present value or principal of the loan.
- FV is optional. It is the future value or the loan amount outstanding after all payments have been made. If this parameter is omitted, the PMT function assumes a FV value of 0.



- *Type* is optional. It indicates when the payments are due. *Type* can be one of the following values:
- If the *Type* parameter is omitted, the PMT function assumes a *Type* value of 0.

ValueExplanation0Payments are due at the end of the period. (default)1Payments are due at the beginning of the period.
 Payments are due at the end of the period. (default) Payments are due at the beginning of the period.
1 Payments are due at the beginning of the period.

• Applies To:

Excel 2010, Excel 2007, Excel 2003, Excel XP, Excel 2000

• Type of Function:

Worksheet function (WS)

VBA function (VBA)



Worksheet Function Example

- Let's take a look at an example to how you would use the **PMT** function in a worksheet:
- This first example returns the monthly payment on a \$5,000 loan at an annual rate of 7.5%. The loan is paid off in 2 years (ie: 2 x 12). All payments are made at the beginning of the period.

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• =PMT(7.5%/12, 2*12, 5000, 0, 1)

Worksheet Function Example

- This next example returns the weekly payment on a \$8,000 loan at an annual rate of 6%. The loan is paid off in 4 years (ie: 4 x 52). All payments are made at the end of the period.
- =PMT(6%/52, 4*52, 8000, 0, 0)
- This next example returns the annual payment on a \$6,500 loan at an annual rate of 5.25%. The loan is paid off in 10 years (ie: 10 x 1). All payments are made at the end of the period.

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• =PMT(5.25%/1, 10*1, 6500, 0, 0)

Worksheet Function Example

- This final example returns the monthly payment on a \$5,000 loan at an annual rate of 8%. The loan is paid on for 3 years (ie: 3 x 12) with a remaining balance on the loan of \$1,000 after the 3 years. All payments are made at the end of the period.
- =PMT(8%/12, 3*12, 5000, -1000, 0)



VBA Function Example

- The **PMT** function can also be used in VBA code. For example:
- Dim LValue As Currency
- LValue = Pmt(0.08/12, 3*12, 5000, -1000, 0)





MS Excel: IPMT Function (WS, VBA)

- In Excel, the IPMT function returns the interest payment for an investment based on an interest rate and a constant payment schedule.
- The syntax for the **IPMT** function is:
- IPMT(interest_rate, period, number_payments, PV, [FV], [Type])



- *interest_rate* is the interest rate for the investment.
- *period* is the period to calculate the interest rate. It must be a value between 1 and *number_payments*.
- *number_payments* is the number of payments for the annuity.
- *PV* is the present value of the payments.
- FV is optional. It is the future value that you'd like the investment to be after all payments have been made. If this parameter is omitted, the IPMT function will assume a FV of 0.



- *Type* is optional. It indicates when the payments are due. *Type* can be one of the following values:
- If the *Type* parameter is omitted, the IPMT function assumes a *Type* value of 0.

Explanation
Payments are due at the end of the period. (default)
Payments are due at the beginning of the period.



- Applies To:
- Excel 2010, Excel 2007, Excel 2003, Excel XP, Excel 2000
- Type of Function:
- Worksheet function (WS)
- VBA function (VBA)



Worksheet Function Example

- This first example returns the interest payment for a \$5,000 investment that earns 7.5% annually for 2 years. The interest payment is calculated for the 8th month and payments are due at the end of each month.
- =IPMT(7.5%/12, 8, 2*12, 5000)
- This next example returns the interest payment for a \$8,000 investment that earns 6% annually for 4 years. The interest payment is calculated for the 30th week and payments are due at the beginning of each week.

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• =IPMT(6%/52, 30, 4*52, 8000, 0, 1)

- This next example returns the interest payment for a \$6,500 investment that earns 5.25% annually for 10 years. The interest payment is calculated for the 4th year and payments are due at the end of each year.
- =IPMT(5.25%/1, 4, 10*1, 6500)



VBA Function Example

- The **IPMT** function can also be used in VBA code. For example:
- Dim LNumber As Currency
- LNumber = IPmt(0.0525/1, 4, 10*1, 6500)



MS Excel: PPMT Function (WS, VBA)

- In Excel, the **PPMT** function returns the payment on the principal for a particular payment based on an interest rate and a constant payment schedule.
- The syntax for the **PPMT** function is:
- PPMT(interest_rate, period, number_payments, PV, [FV], [Type])



- *interest_rate* is the interest rate for the loan.
- *period* is the period used to determine how much principal has been repaid. *Period* must be a value between 1 and *number_payments*.
- *number_payments* is the number of payments for the loan.
- *PV* is the present value or principal of the loan.
- FV is optional. It is the future value or the loan amount outstanding after all payments have been made. If this parameter is omitted, the **PPMT** function assumes a FV value of 0.



- *Type* is optional. It indicates when the payments are due. *Type* can be one of the following values:
- If the *Type* parameter is omitted, the **PPMT** function assumes a *Type* value of 0.

Value	Explanation	
0	Payments are due at the end of the period. (default)	
1	Payments are due at the beginning of the period.	

- Applies To:
- Excel 2010, Excel 2007, Excel 2003, Excel XP, Excel 2000
- Type of Function:
- Worksheet function (WS)
- VBA function (VBA)



Worksheet Function Example

- This first example returns the amount of principal paid off by the payment made in the 5th month of a \$5,000 loan with monthly payments at an annual interest rate of 7.5%. The loan is to be paid off in 2 years (ie: 2 x 12). All payments are made at the beginning of the period.
- =PPMT(7.5%/12, 5, 2*12, 5000, 0, 1)
- This next example returns the amount of principal paid off by the payment made in the 20th week of a \$8,000 loan with weekly payments at an annual interest rate of 6%. The loan is to be paid off in 4 years (ie: 4 x 52). All payments are made at the end of the period.

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• =PPMT(6%/52, 20, 4*52, 8000, 0, 0)

- This next example returns the amount of principal paid off by the payment made in the 4th year of a \$6,500 loan with annual payments at an annual interest rate of 5.25%. The loan is to be paid off in 10 years (ie: 10 x 1). All payments are made at the end of the period.
- =PPMT(5.25%/1, 4, 10*1, 6500, 0, 0)
- This final example returns the
- amount of principal paid off by the payment made in the 14th month of a \$5,000 loan with annual payments at an annual interest rate of 8%. The loan is to be paid off in 3 years (ie: 3 x 12) with a remaining balance on the loan of \$1,000 after the 3 years. All payments are made at the end of the period.
- =PPMT(8%/12, 14, 3*12, 5000, 1000, 0)

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VBA Function Example

- The **PPMT** function can also be used in VBA code. For example:
- Dim LValue As Currency
- LValue = PPmt(0.08/12, 14, 3*12, 5000, 1000, 0)



Reference

http://www.techonthenet.com/index.php

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