Old Tax Regime vs New Tax Regime Which one should you choose?

In the recent past, we have seen a shift from old tax regime to a new tax regime. The government of India announced the new income tax regime in Budget 2020, which became an option for taxpayers from FY2021. However, **its adoption remained low**. In the Union Budget 2023, the government announced a major tweak to the new tax regime to encourage more adoption. These changes will come into effect for the financial year that falls between April 2023 and March 2024 (FY2023-24, or simply FY24), which also translates to assessment year (AY) 2024-25.

The idea is to incentivise people to choose new tax regime with minimal exemptions as compared to the old regime which has many tax exemptions. Under old tax regime, a lot of proofs are required i.e. for Investment, HRA (home rent allowance) and many other exemptions. It is clear that with new tax regime filing ITR (income tax return) is easier as it mainly requires form 16 from the employer. Let’s deep dive straight into the analysis.

Let’s assume that the complicacy of filing ITR doesn’t matter as long as that tax regime is resulting in paying less tax. In order to start our analysis we should have an understanding of how tax is calculated under each regime. We can identify three different tax regimes being introduced in the past few years. Let’s have a brief look at each of them :

1. Old tax regime -

|  |  |
| --- | --- |
| Total Income | Tax Rate |
| Up to ₹ 2,50,000 | 0%₹ |
| ₹ 2,50,000 to ₹ 5,00,000 | 5% |
| ₹ 5,00,000 to ₹ 10,00,000 | 20% |
| Above ₹ 10 lakh | 30% |

Under this regime, there is a standard deduction of 50,000. Apart from standard deduction there is a long list of exemptions from which tax benefits can be availed. I won’t go into those exemptions to keep things simple.

1. New Tax Regime 2020 -

|  |  |
| --- | --- |
| On Income | Tax Rate |
| Up to ₹ 2,50,000 | Nil |
| From ₹ 2,50,000 to ₹ 5,00,000 | 5% |
| From ₹ 5,00,000 to ₹ 7,50,000 | 10% |
| From ₹ 7,50,000 to ₹ 10,00,000 | 15% |
| From ₹ 10,00,000 to ₹ 12,50,000 | 20% |
| From ₹ 12,50,000 to ₹ 15,00,000 | 25% |

|  |  |
| --- | --- |
| Above ₹ 15,00,000 | 30% |

Apart from standard deduction of 50,000, there is a small list of exemptions which I won’t go into detail.

|  |  |
| --- | --- |
| On Income | Tax Rate |
| Up to ₹ 3,00,000 | Nil |
| From ₹ 3,00,001 to ₹ 6,00,000 | 5% |
| From ₹ 6,00,001 to ₹ 9,00,000 | 10% |
| From ₹ 9,00,001 to ₹ 12,00,000 | 15% |
| From ₹ 12,00,001 to ₹ 15,00,000 | 20% |
| Above ₹ 15,00,000 | 30% |

1. New Tax Regime 2023:

Apart from standard deduction of 50,000, there is a small list of exemptions which I won’t go into detail. Also, if the income is upto 7 lakhs after applying standard deduction there is no tax.

The common thing in all these tax regimes is the standard deduction of 50000. let’s make a simple python function to capture all the above information:

##

Code

##

Let’s compare all the above tax regimes using different level of incomes varying between 2.5 lakhs and 50 lakhs.

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Code

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Graph

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From the graph itself, it is evident that the 2023 budget regime is better than the other two given no tax exemptions are availed in the old regime.

Now the question arises - At a given level of income, how much tax exemtions are required such that an individual is **indifferent** between the two tax regimes?

Let’s try to work it out using simple math equation.

**O(**I - E**)** = **N(**I**)** ....(1)

**E\*** = I - **O**-1**(** **N**(I) **)** ....(2)

Where,

O(I) - This function calculates tax using **old** regime for income I.

In our python code - calculate\_tax(I, “old”)

N(I) - This function calculates tax using **2023 budget tax** regime for income I.

In our python code - calculate\_tax(I, “newer”)

In Equation (1) we are trying to find the amount of exemtions **E** required such that an individual with income **I** is indifferent between the two tax regimes.

Let’s try to find out the function O-1(.) - inverse of calculate\_tax(I, “old”). Here is the python code for the inverse -

##

Code

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The intuition behind the mathematical technicality is that we cannot calculate the income if the tax on that income is zero. The income can lie anywhere between 0 and 3,00,000 under the old tax regime. Therefore the answer won’t be unique.

Let’s check if our inverse works i.e. for incomes above 3,00,000, this equation

**O-1**(**O**(I)) = I, should hold true.

##

Code

##

##

Graph

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We can see that our inverse is working fine. Now that we have calculated the inverse, we can easily calculate E\*. Here is the python code for that :-

##

Code

##

##

Graph

##

We can see a flat line after 15.5 lakhs of income, the minimum exemptions remain constant at 3.75 lakhs. Let’s try to understand it intuitively.

It is easy to note that in both the regimes, you have to pay 30% tax on income above 15.5 lakhs. This means that the difference between the two regimes (old and 2023 budget regime) is how the tax is calculated in the first 15.5 lakhs.

Let’s calculate the tax on 15.5 lakhs using both the regimes. Apply standard deduction - 50,000, we are left with 15 lakhs.

Using the old regime - 12,500 + 1,00,000 + 1,50,000 = 2,67,500

Using the 2023 regime - 15,000 + 30,000 + 45,000 + 60,000 = 1,50,000

Under old regime after 10 lakhs, 30% tax is applied. Therefore, in order to make an individual indifferent between the two regimes, we have increase exemptions to save 2,67,500 - 1,50,000 = 1,12,500 additional tax. We can find E\* by this simple equation -

30% of E\* = 1,12,500 which gives us E\* = 3,75,000. This would be true for all incomes between 15.5 lakhs and 50.5 lakhs (after 50.5 lakhs there are other surcharges which are out of our scope).

Let’s also understand why the adoption of 2020 budget tax regime remained low by comparing with 2023 budget tax using E\*. Here is the python code-

##

Code

##

##

Graph

##

We can see that the difference in E\* is huge between both the regime at any given level of income. It is clear that low E\* under tax regime budget 2020 didn’t incentivize people to opt for this regime.

Now, as we have a good understanding of how tax regimes work, it’s time for us to analyze our income and utilize these functions for our decision making.

Let’s take an example with income of 14 lakhs and analyze using our functions.

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Code

##

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Output

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This means that we need a total exemption of 3,25,000 or more to be better off in old regime.

NOTE : 3,25,000 accounts for all exemptions **exept standard deduction of 50,000 which is common in both regimes.**

Therefore, if your HRA, 80C, NPS and etc. under old regime accounts for more than 3,25,000 then you should go for old regime. It’s just that simple!!!!