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The Minimum Income Models of James Meade applied to Brazil

1 BASIC CHARACTERISTICS OF THE MEADE MODELS

This paper intend to analyze the models of supplemental income and social dividends presented by Meade[1], that look toward maintaining a standard of living[2] for persons without any income or with an income less than a defined standard of life.

All the models presented by Meade have common characteristics such as:

1) providing a social dividend and supplemental income involves increased budget expenses, which should be financed by an increase in the income tax rate with all other taxes remaining unaltered; that is, this increase in the tax rate is designated specifically towards financing supplemental income or a social dividend, maintaining a balanced budget;

2) all adult persons, men and women, are considered separately both for receiving the social dividend as well as for payment of income tax, regardless of their marital status (single, married, divorced, etc.);

3) for purposes of receiving benefits, children[3] are considered as corresponding to half of an adult; nevertheless, they do not pay income tax;

4) Meade also considers two types of income, non-adjusted income (NAI) and adjusted income (AI). The former is that which is received by a person as a result of work and capital gains before receiving a social dividend and

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[1] MEADE, James. *Agathotopia: The Economics of Partnership*, Aberdeen: University Press. David Hume Institute (Hume Paper n°16), 1989.

[2] This standard of living still has not been defined by IBGE in monetary values. Nevertheless, the income necessary for a person to have a dignified life with shelter, food, transportation and leisure is known. For the analyses of this paper, a quarter of mimimum salary of R$112.00 will be adopted. In accordance with definition by the **World Bank** "The most commonly used way to measure poverty is based on incomes or consumption levels. A person is considered poor if his or her consumption or income level falls below some minimum level necessary to meet basic needs. This minimum level is usually called the "poverty line". What is necessary to satisfy basic needs varies across time and societies. Therefore, poverty lines vary in time and place, and each country uses lines which are appropriate to its level of development, societal norms and values."

[3] The author does not explicitly define the age for a person to be considered a child but in Brazil is 14 (fourteen yeas old or school age 0 -14).

payment of taxes. On the other hand, adjusted income is the income available to a person after payment of taxes and receiving benefits.

1.1 Personal Tax Allowance

The first modal presented by Meade is the Personal Tax Allowance, in which he assumes that:

1) the income tax policies do not change but the part of the population that receives up to a pre-determined value of social benefits (equivalent to a certain standard of living) is exempt[4];

2) the rest of the population, whose income is superior to that considered as the minimum standard of living, would continue to pay income tax, deducting the Personal Tax Allowance.

In this model, there is a 100% concession of benefits between the pre-established minimum value and the income of the person. This characteristic is known in the bibliography as Complementary Minimum Income.

A mathematical representation of this model of Personal Tax Allowance can be made using the following suppositions:

(1) $AI = MI$ for $MI \geq NAI$ as $t = 0$ and

(2) $AI = MI + NAI \times (1 - t)$ for $MI < NAI$ as $0 < t < 1$

(AI = Adjusted Income, MI = Minimum Income, NAI = Non-adjusted Income, t= tax rate, I = Income)

The following definitions should be taken into account:

$I = Y$

$NAI = X$

$MI = k$

$t =$ tax rate that falls upon non-adjusted income superior to the

minimum income

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[4] This benefit of exemption from payment of income tax up to a determined value is what we call the Personal Tax Allowance.

Redefined in terms of Y and X, one has:

(1) $Y = k + t \times X$ $t = 0$ for $k \geq X$

        $Y = k$

(2) $Y = k + (1-t) \times X$

Isolating X

$X = \dfrac{Y - k}{1 - t}$ for $Y = 0$

$X = \dfrac{-k}{1 - t}$ and $t \neq 1$

According to the equation (2), if $t = 1$, this implies that adjusted income will be equal to minimum income; that is, all excess non-adjusted income in relation to minimum income will be absorbed by income tax at a rate of 100%.

Next, an analysis of the costs and negative aspects that come from the presuppositions of this model will be presented.

In Meade's model, as the minimum income level was already externally determined in accordance with conditions established by the World Bank, the tax rate to be charged for the rest of the population for financing this program should be determined internally. In this case, it is necessary to estimate the number of persons who will receive benefits and the total value of the benefits. Information regarding the total value of the benefits, accompanied by an estimate of the quantity of eligible persons who should pay taxes to finance this program would permit calculation of the income tax rate necessary for this purpose.

In Graph 1 it is possible to verify that persons who receive less than **OM** (taking the horizontal axis as a reference) receive these conditional benefits until they reach the minimum stipulated **OA** (on the vertical axis).

In Meade's first schema, the Personal Tax Allowance is maintained for 100% of the conditional benefits; that is, there will only be income tax charged above the **OM** value.

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Graph 1

(Conditional Benefits, Adjusted Income, Non-adjusted Income)

Conditional Benefits
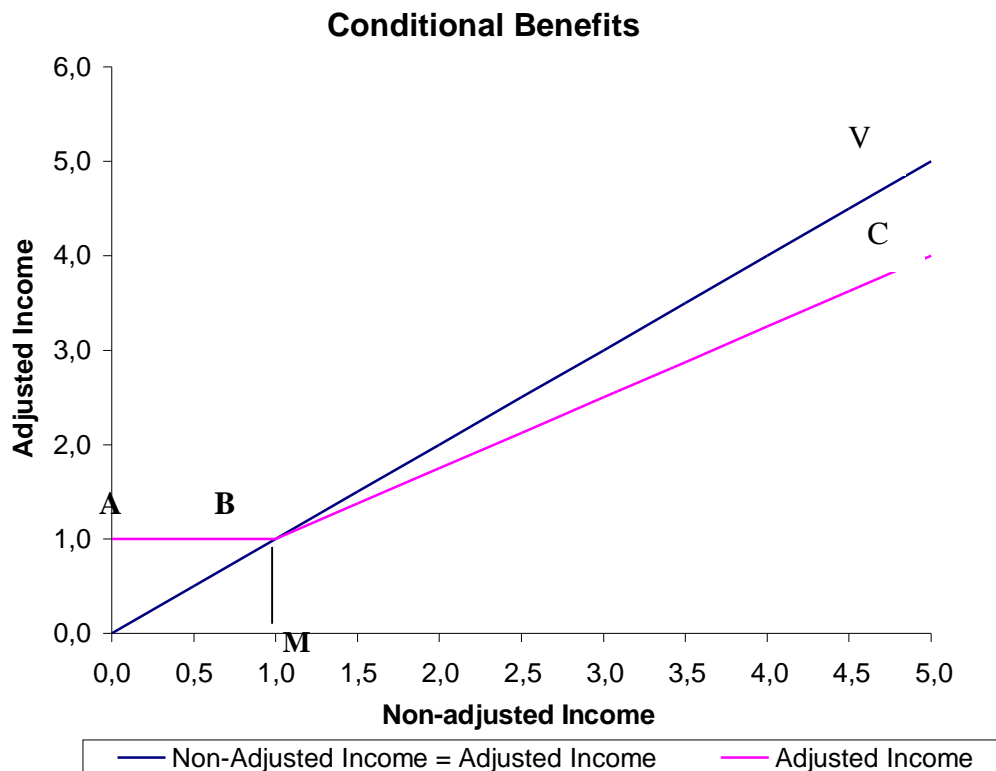
The whole area encompassing the interior of the triangle refers to the benefits given to persons whose earnings do not reach the determined minimum standard of living. Included in this area should be: children, who are legally prohibited from working until 14 years of age; sick persons; the unemployed who do not have another source of income; and the retired whose retirement benefits are less than that stipulated as the minimum standard of living and who do not have another source of income. The persons situated in this interval compose the human contingent that should receive the benefits.

The area enclosed by the triangle BDE refers to the receipts coming from taxes imposed on persons with earnings superior to that stipulated as the income corresponding to the minimum standard of living.

From these definitions, it can be assumed that:

1) the greater the number of persons situated at the bottom of the graph, that is, those who have income equal to zero, the greater must be the tax receipts, which implies a higher tax rate;

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2) a greater tax rate on the income of persons who have earnings above that established as the minimum standard will negatively affect the demand for jobs that offer greater salaries, or in other words, will discourage persons from working for a longer period of time with the objective of increasing their income. It is clear, therefore, that the increase in the income tax rate necessary for financing a minimum income program will have a negative effect on work.

3) the implementation of the program will encourage an increase in informality[5] because persons who have an income greater than zero and less than R$28.00 would not be willing to use part of their time working for a salary less than this level. This would encourage a greater number of persons not to work and to have a zero income level, bringing about the need to increase the contribution rate of those who receive more than the defined minimum;

4) the implementation will also discourage persons from increasing their work hours and reducing their free time, principally coming from the increase of the tax burden imposed on those that obtain a higher income. This discouragement would reduce the contributory base, increasing the difficulty of financing this schema;

5) the degree of informality, that is, the great quantity of persons who make up the informal work market, nearly 50% of the Economically Active Population (PEA) according to data from IBGE (Brazilian Institute of Geography and Statistics)[6], and who do not have proof of earnings, creates another great difficulty for the implementation of this program in Brazil. All these workers would be eligible to receive benefits, even if their undocumented earnings were greater than the minimum income. This, too, would contribute to an increase in the base of persons who have zero income, increasing the quantity to be financed and, in addition, increasing the tax rate to be paid by those who receive income superior to R$28.00;

6) this type of program in a country such as Brazil would demand an official bureaucracy capable of monitoring any fraud against the system, principally

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[5] Informality in this research is understood as the informal (non-official) work market.
[6] This alarming percentage already was cited in criticisms of Senator Eduardo Suplicy's model.

because of the informal work market. This bureaucracy would imply an increase in the cost of the program because the bureaucratic office would have to be created and trained for this purpose.

As we saw above, this model could function very well in a country with a small informal work market and with less inequality in income distribution. However, in Brazil, its implantation should be made with a small benefit, around 1/4 of the value of the minimum salary, in order to be viable. For the value of R$28.00 a month, there will be a need to collect R$14,602,233,424.00 annually to finance it. For an annual tax receipt of R$364,245,188,952.00, this represents a rate of 4.0089%, or 1.8748% of the GDP (Gross Domestic Product), making the implantation of this model viable.

1.2 Differentiated Personal Tax Allowance

This second model presented by Meade is a small variation on the first. The difference is that the Personal Tax Allowance is now considered as 50% of established benefits of R$28.00 and this fact causes a fundamental alteration in government receipts to finance the program, as will be shown in this part.

Assuming that the government does not alter the income tax rate[7], the total receipts will increase as a result of the increase in the tax base. In this model, people will be taxed when their income reaches R$14.00.

This new level upon which a tax rate will be levied, established to finance the model, will cause a distortion. Persons that received an income from their work and other sources equal to the minimum income established by the program will have their income adjusted to a level less than that considered by the program, considering their income after receiving benefits and payment of taxes. A solution to this problem would be to increase the base of persons considering their non-adjusted income. They would pay taxes, but the government would give it back; that is, in the area in which the payment of taxes produces an adjusted income less than the minimum income, the government would provide extra benefits to the point that adjusted income would become equal to the minimum income. There would not be any increase or reduction in

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[7] The rate adopted for income tax has the objective of maintaining the government budget balanced as it was before implementation of the program.

collected taxes up to the point in which persons have an adjusted income equal to R$28.00.

In Graph 2, the model for a Personal Tax Allowance of 50% is represented. Point **B** indicates a person that has income equal to the value established by the minimum income. Upon payment of taxes, his adjusted income will become less than point **A'** which corresponds to the value of the minimum income and no one should have an adjusted income less than this point. A solution would be to extend the segment **AB** up to its intersection with point **Y**. From this point **Y**, a new segment **YC'** parallel to the previous segment **BC**. The segment **YC'** is to the right of **BC**, which indicates an increase in government receipts.

Graph 2

(Conditional Benefits, Adjusted Income, Non-adjusted Income, Exemption of 50% of SB (Social Benefits))

Conditional Benefits

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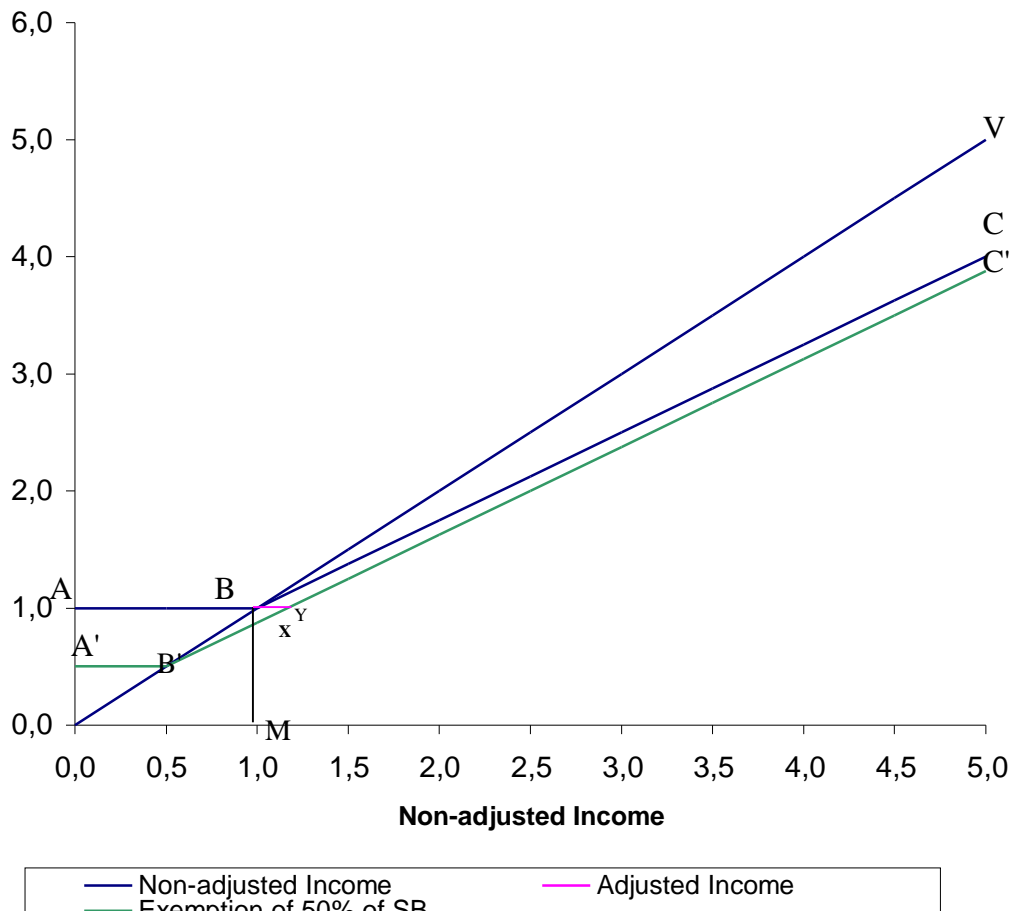
Notice from the Graph that there is an increase in the population that is eligible to receive benefits. Nevertheless, this will not represent an increase in government deficits because the base, or the number of persons taxed, is larger, and maintaining the tax rate constant, there will be an increase in government receipts as will be shown in the next chapter. The slope of the segment remains the same because the tax rate was not altered, but rather was relocated parallel to the right as a result of the reduction of adjusted income coming from the reduction in the value of income subject to taxation.

The advantages and disadvantages of this model are presented below:

1) this model has a negative effect on the work market because upon offering a minimum income, whether a person is working or not, there will be an incentive to devote a greater amount of time to leisure[8]. This fact can also be shown by the **substitution effect**, because with the reduction of the Personal Tax Allowance to the equivalent of 50% of benefits, the percentage of effective salary will be reduced from this point on. By the same token, leisure becomes cheaper and work more expensive in the event of the lack of some form of compensation on the part of the government; in this case compensation would be up to the value of the minimum income;

2) in this model, as in the previous, there is the necessity of a specialized bureaucracy to avoid fraud that would make the project unviable. There is, however, a complication because the population situated between points **B'** and **Y** will pay taxes and receive supplemental benefits to reach the value of the minimum income. In this operation there isn't an increase in receipts nor increase in spending; it is simply a bureaucratic and annoying process for the government, which is restricted to collecting taxes and giving them back to the taxpayer in the same amount.

3) the great possibility of the occurrence of evasion of taxes, again as a result of the high degree of informality of the Brazilian work market, because for these workers there are no documents for proof of income and where there is no proof, their income is ignored or not applied, according to the

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[8] Time available for work and leisure can be defined as 16 hours per day.

methodology of PNAD[9]. Another possible source of evasion is related to its extensiveness;

4) the geographic extension is defined by the borders of the country; therefore, the program should be applied to the entire country. Persons eligible to receive complete benefits should be older than 25 and have a monthly income less than R$28.00. Children would have the right to receive half of this quantity, around R$14.00.

5) the value stipulated for benefits corresponds to R$28.00 for the reasons already given and looks toward providing minimum conditions for survival.

As a result of the reduction of the Personal Tax Allowance to R$14.00, maintaining the minimum income at R$28.00 and the tax rate at 4.0089%, annual receipts would come to R$14,978,242,999.74, representing a gross increase in receipts of R$376,009,575.74. There is, nevertheless, an increase in spending to maintain the minimum income at R$28.00 for those that receive up to R$29.00 and that with the tax rate would come to receive an income inferior to R$28.00. Spending for adjusting the income of persons in the income bracket between R$15.00 and R$29.00 will be R$90,132.37 making the net increase in receipts come to R$375,919,443.38.

1.3 The Mead Model with Payment of Conditional Benefits plus Unconditional Social Dividends without any Alteration in the Income Tax Rate

Meade's third model presents conditional benefits in the Personal Tax Allowance model but with the unconditional social dividend. This unconditional social dividend is provided to all persons regardless of the income they obtain. Meade furthermore considers no alteration in the income tax rate in relation to the previous schema; however, in comparison to the previous schema, one sees that there will be an increase in spending as a result of the increased number of persons who will receive the social dividend.

The government will guarantee a minimum income of R$28.00 to the population that does not have any income in the following way: 25% of the minimum income in a

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[9] PNAD is Pesquisa Nacional por Amostras Domiciliares - National Survey of Sample Households - made by the IBGE

Personal Tax Allowance and 75% in unconditional social dividends. As such the government will provide R$7.00 in a Personal Tax Allowance plus ¾ of R$28.00, which corresponds to R$21.00. This fact implies an implicit taxation[10] of ¼ above the value of the unconditional social dividend.

The action of this theoretical model on the population has the following characteristics:

1) For the work market, one should observe the differentiated activity in the extremes; on the one hand are the persons who have low incomes and on the other hand, the persons who have the greatest incomes.

The first extreme to be analyzed is that of zero income, that is, that to the left of point **M** referring to the value of the minimum income on Graph 5. For these persons, even for those that have zero income, there will be an incentive to look for work because they will be able to increase their effective income as they will continue to receive ¾ of the total benefit. This is reflected in the fact that the **substitution effect**, the reduction of work hours for leisure time, is low and could even be negative and increase the labor supply. For the persons that are situated to the right of point **M** on Graph 3, adjusted income is superior to non-adjusted income until the point in which it is four times greater than the value of the benefit. This is because from point **M** on there is an income tax charge of 25% on non-adjusted income that exceeds this limit. This new charge will cause labor to reduce work hours and increase leisure time. For persons to the right of this point of equilibrium, discouragement to work is greater as their non-adjusted income is greater than their adjusted income, which will cause a fall in net earnings from work and a reduction in the relative price of leisure. This will cause persons to reduce time devoted to work and increase leisure time. These are the people that will contribute to financing the schema. With a reduction in income of these people, alternatives for continuing with a balanced government budget would be a reduction in the value of the social dividend or an increase in the tax rate.

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[10] An implicit taxation of 25% on the value of benefits is considered for persons that have income above zero because they receive the complete benefit of R$28.00 while others receive ¾ of this value due to a

In order that the **income effect** be maintained at the same level of utility, persons that receive the benefit will reduce time devoted to work; therefore, they will offer a smaller quantity of this production factor.

As was noted, there is an incentive for persons situated to the left of point M to increase their number of work hours because they receive as a stimulus that which corresponds to ¾ of the value of the benefit. This fact will contribute to persons devoting a greater number of hours to work and as such increasing their level of utility.

Through that which was shown, it can be concluded that persons who have income less than the benefits given will devote a greater part of their time to work, which will reduce the number of persons that would continue with zero income. On the other hand, those who have non-adjusted income greater than the value of the benefits given would have the incentive to reduce the number of hours devoted to work and increase the number of hours devoted to leisure. This would cause a reduction in the number of persons capable of contributing to the financing of benefits.

In the case of Brazil, according to estimates from IBGE[11], around 48 to 49% of the working population does not have proof of income because they are employed without an official work card or they work independently. These workers would be open to receiving benefits since they could declare an income less than what they really have with the objective of receiving these benefits. This could create lack of faith of the population in relation to the

tax charge of 25% on the total value of the benefit.
[11] According to estimates from the Pesquisa Mensal de Emprego (Monthly Job Research), in the metropolitan regions, approximately 48% of the working population do not have a work card or work independently. For this population there is no proof of income, which could make them elegible for benefits.

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benefits schema and create general informalization[12] of the economy, which would lead to its bankruptcy.

Income tax, in spite of being a declared tax, can be an alternative utilized to reduce the possibility of evasion, since persons have to justify variation in their assets. This does not eliminate the need for a well-trained bureaucratic body to reduce the existence of evasion.

2) In the case of Brazil, as a result of the great number of person that do not have proof of income, there is the need to implant a specialized bureaucracy with the objective of avoiding or reducing the possibility of fraud against the benefits schema.

3) The great number of persons who do not have proof of income contributes to increase the existence of evasion since these persons could receive an income greater than the value of benefits, to the right of point **M**, and even so would not contribute to tax payments because of the impossibility of proving their income.

4) The geographic extension of the program would be the entire nation and the persons that would be eligible to receive would be those above 25 years of age, regardless of their marital status, and whose monthly income is less than the value of two minimum salaries. Children would also have a right to benefits; however, they would receive only half value.

5) The value of benefits for persons who have income equal to zero would be a quarter of minimum salaries - in September 1996, the equivalent of R$112.00. Persons whose income is greater than zero and less than the value of benefits would receive supplemental income up to the value of the benefit. For persons who have income greater than the value of benefits, a 25% income tax on this value would be charged but they would receive what corresponds to ¾ of its value.

Equation 1

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[12] The concept of informality here is different from that adopted by IBGE because here informality is considered to be the lack of ability to prove a person's income.

$$AI = (MI - NAI) * t + (1 - t)* MI$$

The government will guarantee a minimum income of R$28.00 to the population that does not have any form of income in the following way: 50% of the minimum income in a Personal Tax Allowance and 50% in an unconditional social dividend. So, it will provide R$14.00 in a Personal Tax Allowance plus ½ of R$28.00, which corresponds to R$14.00. This fact implies an implicit taxation[13] of ½ on the value of the unconditional social dividend.

This equation allows one to work with multiple values of the minimum income whatever it may be and in whatever period of time because the index is a fractional unit of the minimum salary and not a monetary value which might not keep up with inflation over time. This equation extends to other variables and can be verified in Table 3, assuming that the income tax rate is 25%.

Table 1

<u>Calculation of **MI**, **NAI**, and **AI** indices for **t** = **0.25** or **25%**</u>

Monetary Values/Minimum Income/Index(MI)/Index(AI)/Index(NAI)/Rate(t)

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[13] An implicit taxation of 25% on the value of benefits is considered for persons that have income above zero because they receive the complete benefit of R$224.00 while others receive ¾ of this value due to a tax charge of 25% on the total value of the benefit.

| Monetary Values	Minimum Income	Index (MI)	Index (AI)	Index (NAI)	Rate (t)
R$0,00	R$28,00	1,000	1,000	0,000	25%
R$2,00	R$28,00	1,000	1,054	0,071	25%
R$4,00	R$28,00	1,000	1,107	0,143	25%
R$6,00	R$28,00	1,000	1,161	0,214	25%
R$8,00	R$28,00	1,000	1,214	0,286	25%
R$10,00	R$28,00	1,000	1,268	0,357	25%
R$12,00	R$28,00	1,000	1,321	0,429	25%
R$14,00	R$28,00	1,000	1,375	0,500	25%
R$16,00	R$28,00	1,000	1,429	0,571	25%
R$18,00	R$28,00	1,000	1,482	0,643	25%
R$20,00	R$28,00	1,000	1,536	0,714	25%
R$22,00	R$28,00	1,000	1,589	0,786	25%
R$24,00	R$28,00	1,000	1,643	0,857	25%
R$26,00	R$28,00	1,000	1,696	0,929	25%
R$28,00	R$28,00	1,000	1,750	1,000	25%
R$30,00	R$28,00	1,000	1,804	1,071	25%
R$32,00	R$28,00	1,000	1,857	1,143	25%
R$34,00	R$28,00	1,000	1,911	1,214	25%

The result of this model when the tax rate is not changed is an annual deficit of R$14,086,662,576.00. Nevertheless, to finance this model, the tax rate will be 7.5830%, for a taxed income of R$378,331,851,582.00.

Graph 3

Unconditional Dividend with 25% Income Tax

(Adjusted Income, Non-adjusted Income, 25% Tax, Income with benefits without taxes)

Unconditional Dividend with 25% Income Tax
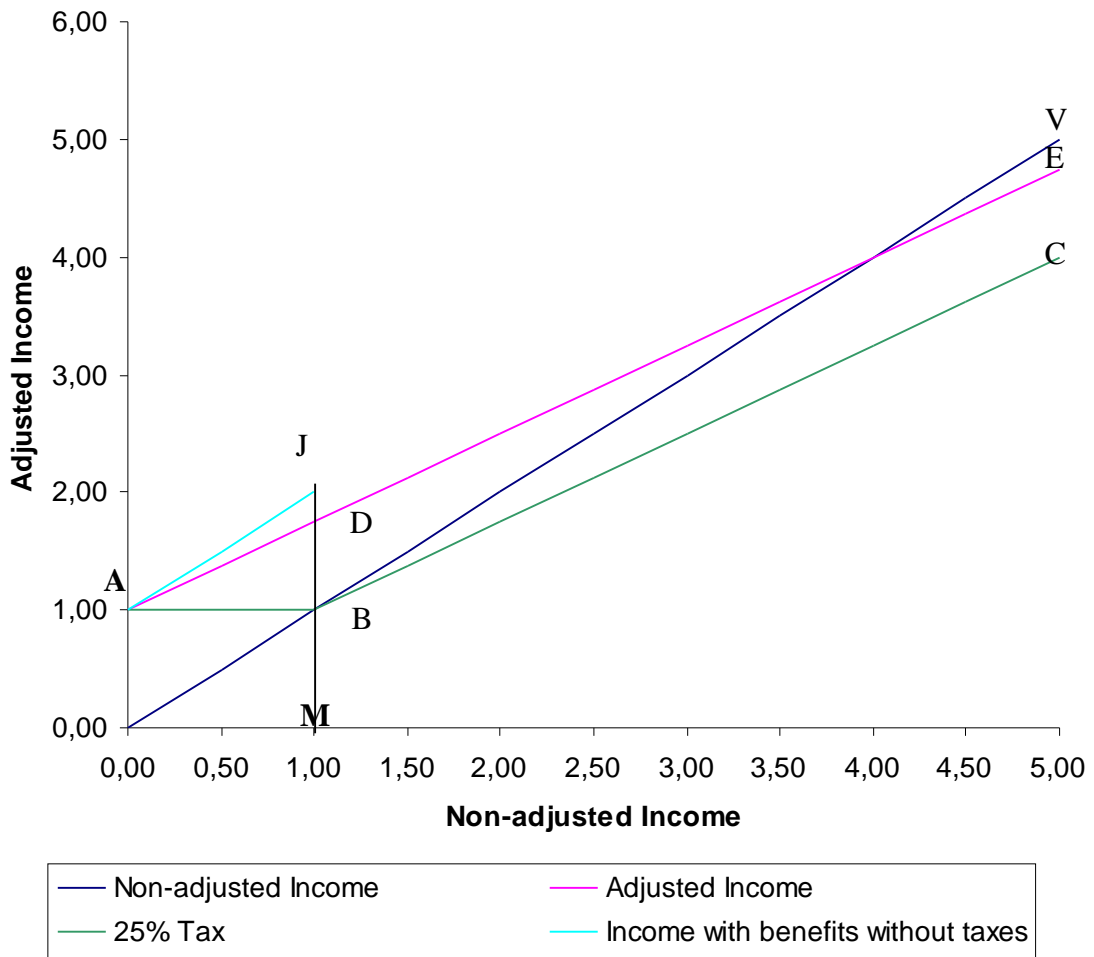
1.4 Meade Model with Conditional Payment of Benefits plus Unconditional Social Dividends with Change in the Tax Rate on the Value of Benefits

This schema of minimum income from Meade which deals with an unconditional social dividend is different from the previous model due to an increase in the income tax rate. Therefore, an increase in government receipts is seen as a result of the increase in the tax rate that would be used to modify the budget.

Equation 2, which shows the effects of adjusted income (represented by the red line on the graph), is the same as equation 1. The only variable undergoing change is the **t**, which changes from 0.25 to 0.5.

Equation 2
$$AI = (MI - NAI) * t + (1 - t) * MI$$

AI is the adjusted income (net income), MI is the value of the minimum income determined by the model, NAI corresponds to non-adjusted income and t is the tax rate. These values are represented by indices; that is, determining the value of the minimum income (MI), for example R$28.00, means that the unit of minimum income corresponds to R$28.00, just as R$14.00 corresponds to half a unit of the minimum income. This equation also extends to other variables and can be verified in Table 2, assuming that the income tax rate is 50%.

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Table 2

Calculation of **MI**, **NAI**, and **AI** indices for **t** = **0.50** or **50%**

Monetary Values/Minimum Income/Index(MI)/Index(AI)/Index(NAI)/Rate(t)

| Monetary Values	Minimum Income	Index (MI)	Index(AI)	Index(NAI)	Rate(t)
R$0,00	R$28,00	1,000	1,000	0,000	50%
R$2,00	R$28,00	1,000	1,036	0,071	50%
R$4,00	R$28,00	1,000	1,071	0,143	50%
R$6,00	R$28,00	1,000	1,107	0,214	50%
R$8,00	R$28,00	1,000	1,143	0,286	50%
R$10,00	R$28,00	1,000	1,179	0,357	50%
R$12,00	R$28,00	1,000	1,214	0,429	50%
R$14,00	R$28,00	1,000	1,250	0,500	50%
R$16,00	R$28,00	1,000	1,286	0,571	50%
R$18,00	R$28,00	1,000	1,321	0,643	50%
R$20,00	R$28,00	1,000	1,357	0,714	50%
R$22,00	R$28,00	1,000	1,393	0,786	50%
R$24,00	R$28,00	1,000	1,429	0,857	50%
R$26,00	R$28,00	1,000	1,464	0,929	50%
R$28,00	R$28,00	1,000	1,500	1,000	50%
R$30,00	R$28,00	1,000	1,536	1,071	50%
R$32,00	R$28,00	1,000	1,571	1,143	50%
R$34,00	R$28,00	1,000	1,607	1,214	50%
R$36,00	R$28,00	1,000	1,643	1,286	50%

For this model, the income tax rate is 50% on the minimum income and on non-adjusted income, except for persons that are situated at the beginning and as such have income equal to zero. These persons receive the complete value of the minimum income.

The conclusion for this model, considering that the income tax rate was not changed, is an annual deficit of R$9,376,154,508.00, while this model will be financed with a tax rate of 6.4178% for a taxed income of R$373,624,809,948.00; therefore, less than the previous model.

Graph 4

Unconditional Dividend with 50% Income Tax

(Adjusted Income, Non-adjusted Income, 50% Tax applied beyond the value of the Minimum Income, Income with benefits without taxes up to the limit of the Minimum Income)

Unconditional Dividend with 50% Income Tax
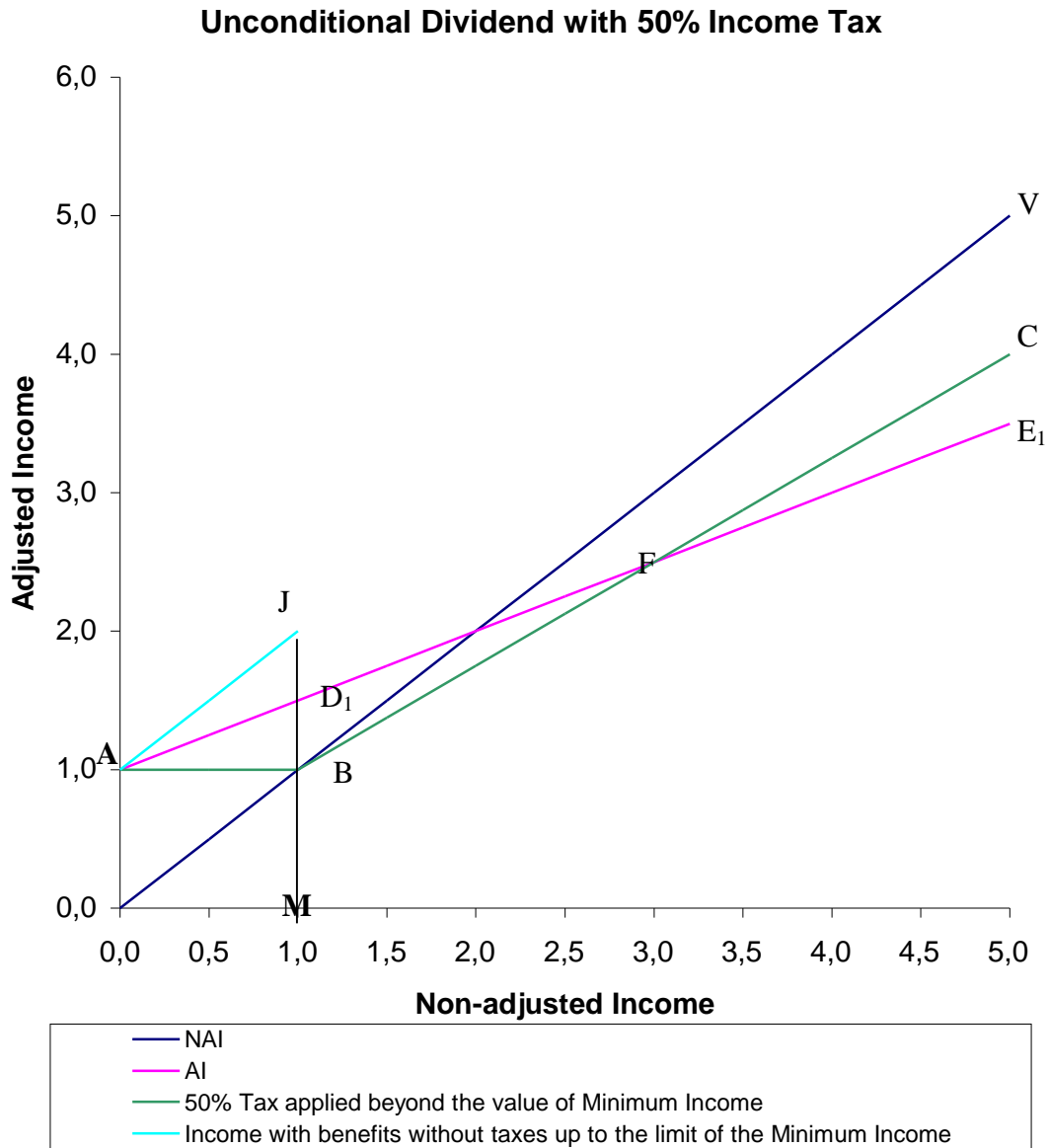
1.5 Evaluation of Meade's Theoretical Models

Meade's models establish a value for minimum income and estimate a tax rate necessary to support this monetary benefit. Nevertheless, it's worth emphasizing that for

Meade the government budget must remain balanced and this means that an increase in the value of benefits or an increase in the base of beneficiaries will cause an increase in the income tax rate with all of its consequences on the work market.

Also for Meade, analyses of the two models will be made. The first to be analyzed will be the Personal Tax Allowance and its variation. The second will be the model that represents a mix between the Personal Tax Allowance and the Unconditional Social Dividend. Both models utilize a 100% rate for supplementation of the difference between the minimum income and the non-adjusted income[14]. This implies that if an individual has non-adjusted income equal to zero, he will have a supplement of R$28.00.

For the first model to be evaluated, the equations are as follows:

$$AI = MI \text{ for } MI \geq NAI \qquad \text{as } t = 0 \text{ and,} \qquad \textbf{(1)}$$

$$AI = MI + NAI \times (1 - t) \text{ for } MI < NAI \text{ as } 0 < t < 1 \qquad \textbf{(2)}$$

The first equation determines the demand for monetary benefit of the minimum income and also allows calculation of its total. To discover the number of beneficiaries simply add up all persons, including children from 0 to 14 years of age. The total number of beneficiaries is found observing the following sequence:

1st   establish the value of supplemental income up to the value of the minimum income. For children, this value is constant and equals R$14.00;

2nd   multiply this value by the number of persons that have the right to this supplement. In this way, one finds the volume of resources necessary for each income level;

3rd   sum up these values until the value of the non-adjusted income coincides with the value of the minimum income. One then obtains the total demand for the benefit and the volume of resources to be financed.

The volume of resources necessary for financing this model is obtained in the same way as the model of Senator Eduardo Suplicy; that is, it is calculated between the differential of non-adjusted income and the minimum income. These resources are obtained observing the following steps:

1st   calculate the difference between non-adjusted income and the minimum income;

2nd   multiply this value by the number of persons. The volume of resources for each income level will be determined;

3rd   total all these resources and obtain the offer of taxable income.

The values estimated for this model, both for the demand for benefits, including children, as well as for the offer of taxable resources were, respectively, R$14.602.223.424,00 and R$364.245.188.952,00 annually. It is worth emphasizing that the annual demand would represent 1,8748% of the GDP (Gross Domestic Product) and approximately 4,0089% of taxable resources.

The alteration proposed by Meade in order to increase government receipts would be to reduce the Personal Tax Allowance to 50% of the value of the minimum income. In this way, persons who have adjusted income above R$14.00 would begin paying taxes, but, in compensation they would receive subsidies from the government to supplement the minimum income of R$28.00.

According to this new model, the volume of resources necessary to finance it, including children, would be R$14.602.223.424,00 annually. From the perspective of the offer of resources, the objective of which would be to increase receipts, this increase in the number of individuals, maintaining a fixed rate of taxation, would cause an increase in government receipts by R$14.978.242.999,74.

The second model presented by Meade utilizes both the instrument of the Personal Tax Allowance as well as the Unconditional Social Dividend, the mathematical equation that represents this model being:

$$AI = (MI - NAI) \times t + (1 - t) \times MI$$

According to this equation, while MI > NAI, the t means subsidy and for MI < NAI, the t is the positive income tax rate.

Establishing the value of MI = R$28.00, it becomes necessary to find a tax rate that permits financing of this sum. According to data provided by the PNAD/1996 and this equation, the rate necessary for financing this program is approximately 7,5830%. This model with a minimum income of R$28.00 and a rate of 7,5830% generates an annual demand for resources of R$28.688.886.000,00 and an offer of

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[14] For Senator Eduardo Suplicy's project, non-adjusted income is equivalent to gross income.

R$378.331.851.528,00. These values of annual demand for resources correspond to approximately 3,683% of the GDP of 1996.

The difference in the third model analyzed from the second is that the Social Dividend corresponds to 50% and the Personal Tax Allowance corresponds to 50%.. The rate necessary for financing this program is approximately 6,4178%. This model with a minimum income of R$28.00 and a rate of 6,4178% generates an annual demand for resources of R$23.978.377.932,00 and an offer of R$373.624.809.948,00. These values of annual demand for resources correspond to approximately 3,079% of the GDP of 1996.

It can be concluded that owing to the low rates for financing the models for the established minimum income value of R$28.00, it is possible for any to be implanted in Brazil.

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