



## Outline of Presentation

1. Conceptual Framework (Partial Recap)
  - Prototype Model
  - Numerical Illustration

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## 1. Conceptual Framework Assessing TIP Impact by Stage

- **IMPACT** – cost and benefit as measured by economic activities (increased investment, jobs, income) and their revenue

economic activities directly  
and their revenue consequences.

economic activities triggered by  
and their revenue consequences.

multiplier effect of personal  
from both direct and indirect  
revenue consequences.

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## 1. Conceptual Framework The Toolkit

▶ **Recording** (Accounting Data) – *Recording Direct*

▶ **Estimating** (Prototype Model) – *Estimating Indirect*  
*economic impact using input-output accounts and other*  
*data (including tax returns using taxpayers' accounting*  
*data, i.e., firm-based financial*  
*statements and tax returns)*

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## 2. A Step-by-Step Prototype Model An Overview

Step 1: Estimating the direct economic impact

▶ Estimating the indirect economic impact

▶ Estimating the induced economic impact

▶ Estimating the total revenue impact

▶ Estimating the net economic and revenue

▶ Drawing findings from sensitivity

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## 2. A Step-by-Step Prototype Model A Technical Note

*Theoretically, we should follow the three stages of TIP  
the framework to estimate both  
impacts within each of these  
prototype model, I separate the  
economic impact for an easier*

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## 2. A Step-by-Step Prototype Model Step 1: Estimating Direct Economic Impact

➤ **Input data:** Investment data (redundant vs. genuine additional) relevant to TIP target, capital to, wage rate, and return to

income vs. return to  
number of jobs directly attributable

**Parameters:** Redundancy ratio,  
, and Crowding-out probability.

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## 2. A Step-by-Step Prototype Model

### Step 2: Estimating Indirect Economic Impact

- **Input data:** Total purchase of capital goods and material inputs for producing the forward-linking output and the split of these between imported and domestically produced, rate of capital/labor/material allocation within

pre-tax profits, jobs and personal income of the producing industry required by its

the split of both capital and material inputs of the linking industry between imported and domestically produced and the pre-tax profit margin by

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## 2. A Step-by-Step Prototype Model

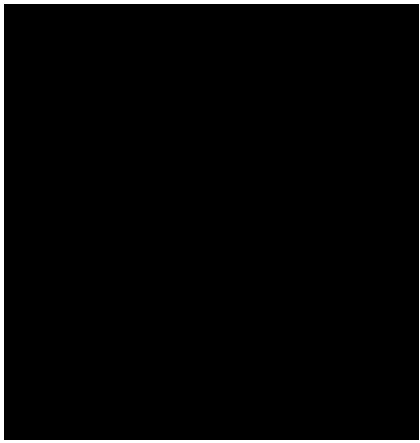
### Step 3: Estimating Induced Economic Impact

- **Input data:** total personal income resulting from Steps 1 and 2 and the national income

induced impact = total personal income from direct and indirect effects (multiplier -1)

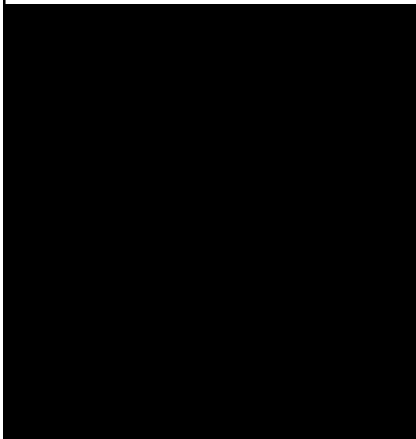
**Parameters:** the national income

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### 3. A Step-by-Step Numerical Illustration

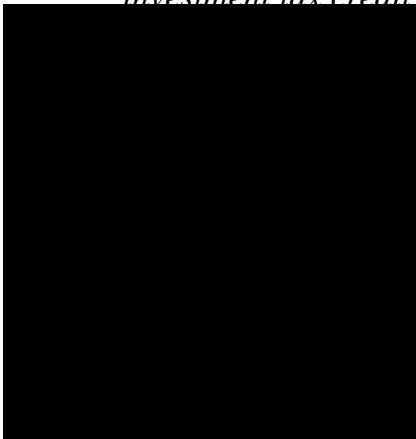
#### A Recap:



- Direct Impact
- Indirect Impact
- Reduced Impact
- Revenue Impact
- the overall impact

### 3. A Step-by-Step Numerical Illustration General Assumptions

1. The tax Incentive Program (TIP): *a 20% refundable investment tax credit for a designated industry*

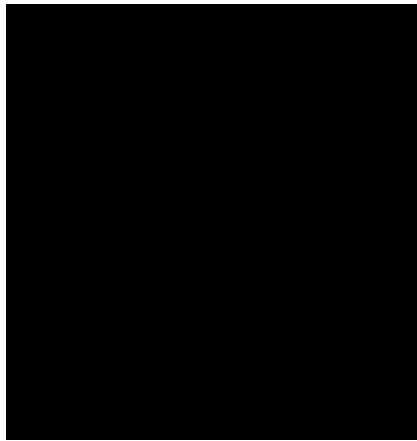


... and tax data at the firm level  
... ed Customs afo768(-)-2.221d535(om)9.480on 5331(m)9.4868(t

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### 3. A Step-by-Step Numerical Illustration

#### **Step 1: Estimating Direct Impact**

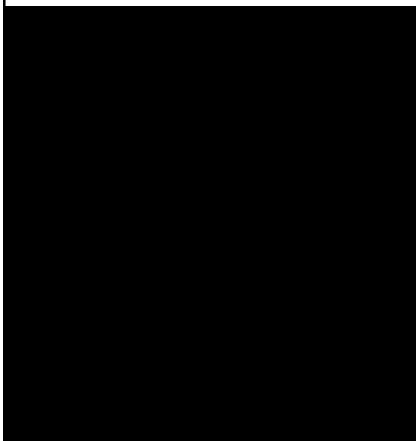




### 3. A Step-by-Step Numerical Illustration

## Step 2: Estimating Indirect Economic Impact

#### Implication from Step 1:



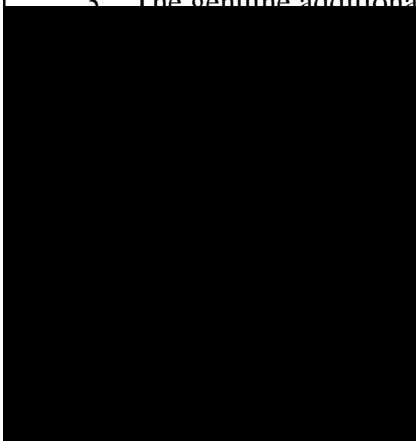
...l capital investors will purchase:  
...goods, and  
...als as their business inputs.

...th capital goods and materials as  
...additional investor: 50:50.

### 3. A Step-by-Step Numerical Illustration

## Step 2: Estimating Indirect Economic Impact

#### Implication from Step 1 (cont'd):



3. The genuine additional investors will buy 50 units of  
... capital good and 100-units of  
... materials. Therefore,

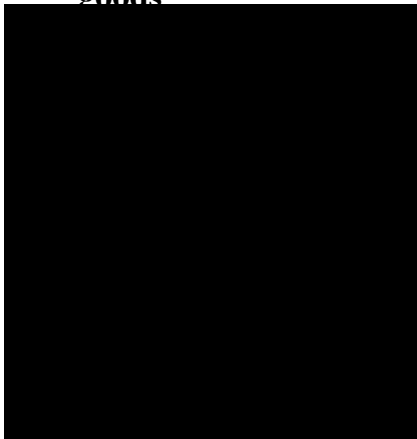
... impact of TIP is the increased  
... undertaken by domestic firms that  
... the 50 units of capital goods and 100  
... puts for the genuine additional  
... TIP.

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### 3. A Step-by-Step Numerical Illustration

#### Step 2: Estimating Indirect Economic Impact

A. For domestic firms producing the 50-unit capital goods



ptions:

= 10% of total output

material allocation is: 4:4:1

impact:

### 3. A Step-by-Step Numerical Illustration

#### Step 2: Estimating Indirect Economic Impact

##### C. Summing up the indirect economic impact:

1. *As a result of the estimating procedures illustrated in A, the indirect economic impact is as many times as the industrial investment. Therefore, the sum of the results from the previous steps is the minimum of total indirect economic impact.*

The indirect economic impact includes:

1) *The pre-tax profit = 15 (= 5 + 10)*

2) *Total investment = 40 (= 20+20)*

3) *The increased labor income = 60 (= 20+40)*

4) *The number of jobs = 30 (= 10 + 20)*

5. *The minimum GDP increment = 75 (= 15 + 60)*

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### 3. A Step-by-Step Numerical Illustration

#### Step 3: Estimating Induced Economic Impact

##### 1. Implication from Steps 1 and 2:

1) The increased GDP  $\geq 285$  (including 210 from Step 1 and a minimum of 75 from Step 2).

of 20 due to a 20% investment tax credit on investment, which offsets the government's additional spending. Therefore, the total income that can have induced impact, through the multiplier effect, is *equal to or greater* than 265 (= 285 - 20).

Assuming a consumption to income ratio = 80%, implying a multiplier = 5 (= 1/(1-80%)).

##### 3. Induced Economic Impact

The induced economic impact is the net of "government spending cut" (or -I).

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### 3. A Step-by-Step Numerical Illustration Step 4: Estimating Revenue Impact

#### 1. Tax parameters derived from Steps 1 and 2:

1) Initial revenue loss due to ITC (20%) claimed on the investment (100) = 20, similarly, genuine additional investment = 20, after-tax profit = 25, and labor income = 260

#### Assumptions:

Corporate income tax (CIT) rate = 25%

Personal income tax (PIT) rate applicable to labor

Income tax rate (in %) for labor income: 30%

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### 3. A Step-by-Step Numerical Illustration Step 4: Estimating Revenue Impact

#### 1. Initial revenue loss

Initial revenue loss due to ITC (20%) claimed on the investment (100) = **-20**

#### Assumptions:

Corporate income tax (CIT) rate = 25%

Personal income tax (PIT) rate applicable to labor

Income tax rate (in %) for labor income: 30%

Initial revenue loss = **-15.55** = **-20** - **13.75** + 18.2

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### 3. A Step-by-Step Numerical Illustration

#### Step 5: Summary and Findings

➤ *Quantitative Summary:*

*Impact:*

- *Increased GDP*  $\geq 1,345$  (= 210+75+1,060)

- *Increased jobs*  $\geq 130$

*Revenue impact* =  $\geq -15.55$

*the greater the redundancy ratio,  
economic impact and the greater  
from any well-intended tax*

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## 4. Conclusion

1. Sophisticated economic models built upon the input-output accounts might be ideal, but a micro-based on companies' financial returns can be an accessible

*ely analytical point of view, tax  
inferior to nationwide tax  
investment activities across all  
fferently.*

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