«Note»

A Two Region Model Applied to China National Accounts: Towards Vital Policies for Sustainable Growth

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(Received on October 8, 2004)

Preface

This note intends to show the data and results of my paper (the same title as above) presented at the 8th China-Japan Symposium on Statistics, Guilin, China on 16th of Oct, 2004.

My paper depends on an endogenous growth model, which needs capital stock. This capital stock by country is difficult to obtain from current statistics and update.¹⁾ It implies that it is difficult to estimate capital stock by country. Nevertheless, it is most essential to use capital stock (hereafter, capital) to measure the growth rates (including the rate of technological progress) in the real world and under convergence. My model as an endogenous growth model needs capital by country. My paper [IARIW, Aug, 2004] proposed a method for estimating capital, by studying the relationship among the initial values available in such statistics as International Financial Statistics, IMF, without relying on the perpetual inventory method. Of course, both methods should be compared with each other if possible.²⁾ My attention is that the value of capital by country should be reviewed and integrated from an economy as a whole.

For this paper, I have roughly estimated capital of China by year and used these values for vital policies derived from my model. If my estimation is appropriate, its capital-output ratio is already close to 2.0,³⁾ which implies that China is going into one of advanced

- OECD, "Flows and Stocks of Fixed Capital," [1997] published capital stock for 1970– 1995 by country. The Penn World Table (Mark 5) of Summers and Heston [1991] published the capital-labor ratio for 29 countries among 138 countries. Since then, there has been no statistics of capital stock.
- I compared my results with those in Mark 5 (by calculating capital from the capitallabor ratio) and found that there were not so much differences between them.
- 3) The Japanese national accounts have published capital in detail by year for many years. I tested these values for the capital-output ratio by sector using my model and found that it may be better to exclude tangible non-producible assets (for connecting depreciation or the depreciation rate with capital, investment, and the growth rate of capital under convergence).

countries, as I clarified in the above paper. My suggestion is that any economy must control the capital-output ratio not to exceed 3.0. This means that any advanced country needs the balance between private and public investment and the balance of per capita output between seashore (H) and inland (F) regions.

For this adjustment, I aggregate two regions of an economy using my model based on the Cobb-Douglas production function, assuming that the relative price level is one: $Y=p\cdot Y_H+Y_F$. If we use two sets of $Y=p\cdot Y_H+Y_F$, this becomes the two-region model. The two-region model can be divided into two-regions, two-goods, two-sectors, and two-countries, by setting different assumptions.

In a strict two-region model, capital-goods output in one region should be equal to the sum of the increase in capital of both regions. I replace this restriction by assumptions.⁴⁾ Instead, I stress, in this paper/note that how we can prolong the years when a high sustainable growth rate is maintained by shifting resources between two regions, seashore and inlands, together with allowed inequality of income per capita between two regions. My conclusion is that this is possible by grouping rich and poor provinces under several sub-groupings.

Finally, the initial values and parameters produce variables under both current and convergence situations. For variables under convergence, I have used both equations and recursive programming. This paper and note here only use each equations for both the current and convergence situations. This simplicity is convenient for absorbing the essence of the literature in international trade and expressing the results corresponding with the literature.

In short, this note shows a rough version of the two-region model using China, 2002, yet clarifies how an economy can maintain a sustainable growth rate by shifting the investment in one region to another and adjusting the capital-output ratio between two regions. The following note repeats the résumé of the paper, Guilin, but I do not secall my paper, 2003, that was postponed last fall.

1. Introduction

Is it possible for a country to maintain a sustainable growth? A sustainable growth implies that the rate of technological progress under convergence is con-

⁴⁾ In my closed model, the difference between saving and investment is composed of banking costs. These costs include bad-debts. However, in my open economy the difference between saving and investment is equal to the sum of the balance of payment and capital transfers, net, which is divided into government and private sectors.

tinuously stable. This rate is essential in economic growth and based on human capital, yet how can this rate be measured? And, what are the conditions for sustainable growth? These conditions must be the upper limit of the capital-output ratio, the maximum difference of the rate of technological progress between seashore and inland regions, and a consistency of real assets with the role of financial assets or a permitted range of imbalance between real assets and the financial assets related to the central bank interest rate.

This paper intends to analyze the national accounts in China by region and clarifies vital requirements for sustainable growth which are hitherto unknown, not to repeat a similar misleading as seen in the Japanese economy after the 1990s. For this purpose, I develop a two region model, supported by the method for measuring capital (stock) [1] and the method for neutralizing the relationship between real and financial assets [2]. A two region model, which is the main issue in this paper, is based on my endogenous growth model [3, 4] under the current and convergence situations. I find that my endogenous growth model is applicable to each capital-goods and consumer-goods in the two region model by assuming that seashore region manufactures capital-goods and the inland region consumer-goods. I denote the H-region for capital-goods and the F-region for consumer-goods. If the difference of the rate of technological progress between these two regions is beyond a permitted magnitude, it is difficult to maintain sustainable growth since a soft-landing convergence cannot be guaranteed at a bubbled stage. In other words, any country, not only China but also India, Brazil, and Russia, cannot maintain its sustainable growth in the longterm unless it does not enlarge or do neutralize the above difference. In a word, poor people must be faster educated.

For a two region model applied to China, I need to confirm the theories of international trade between countries, in particular the Heckscher-Ohlin model, Rybczynski, the Stolper and Samuelson, and even Leontief paradox. I find a Papers of the Research Society of Commerce and Economics, Vol. XXXXV No. 2 similarity for each framework of two regions, two commodities, two sectors, two countries, and the world, in particular, for the treatment of redistribution of resources including the balance between saving and investment. The two region model, for simplicity, assumes that total resources are fixed, where capital or labor of one region is shifted to that of the other region.

2. Methodologies to the two region model

Before starting, I confirm that there is no literature that theoretically measures the rate of technological progress under convergence. For example, according to Motoshige Ito [5], China looks for the quality of growth under excessive growth of capital. He points out that the growth rate of capital is 40% while the growth rate of output is 9%. What is the difference between these two rates, he asked. He concludes that not only China but also many countries must only enjoy capital growth without the increase in steady total factor productivity. Krugman's [1994] myth of Asia's miracle was tested later when Malaysia severely suffered from financial crisis in 1997, but similarly without measuring the rate of technological progress under both the current and theoretical situations.

Let me explain the process to lead to the two region model, with methodologies. For my previous paper [6], I calculated parameters and measured variables using China national accounts for 31 regions, but without introducing the role of financial assets and revealing urgent policies necessary for the central government to take. Kamiryo [2] integrated *beta* with both the limit of growth as shown by Penrose [1966] and Uzawa [1968] and the role of financial assets as shown by Freedman [1968], together with an empirical work on the unbalance between the corporate and the government & household sectors in Japan after the 1990s. Kamiryo [1] clarified, setting four clubs, a base for why poor countries could not get into such catching-up countries as China and India. The two region model is here now finalized, by using *beta* [4] totally related to structural

reform and integrating the above methodologies. The value of *delta* is formulated only to neutralize diminishing returns in the model.

The two region model absorbed the ideas of Findley [1960] and Uzawa [1961. 1965] (for review, see Solow [1961]). The ratio of wages to rentals was already used in an open economy, whose original cases were shown as Eli Heckscher [1919], Bertil Ohlin [1933], Lerner [1933-34], Stolper and Samuelson [1941-42], Rybczynski [1955], and Ronald Jones [1961]. However, I stress here that the literature assumes constant cost (linear homogenous) technology. My model expresses variables under both zero and positive/negative technological progress by using *beta* that is directly related to investment in quality and is calculated using the equations in [4] under convergence: the lower is *beta*, the higher the rate of technological progress. The two region model here concentrates on the redistribution/shift of resources under the assumptions: (1) Aggregated/total values of national/regional accounts are fixed (in this sense, I do not cite the result of Rybczynski). (2) If the current value of capital or labor increases in one region, this value must be decreased in the other region to offset the increase in one region. (3) As shown by Stolper & Samuelson and Jones [1965], quantity (commodity outputs and factor endowments) is dual/reciprocal to quality (commodity prices and factor prices), which is true even under the above (1).

3. My research questions and replies

3.1 Each idea behind the three questions

Three research questions are: (1) Which is correct, the capital-labor ratio is higher in capital-goods (as shown in Uzawa [1961] or the capital-labor ratio is higher in consumer-goods (as shown in Findley [1960])? (2) Is the relative share of profit fixed/constant or not (as raised by Solow [1960])? (3) For sustainable growth, is it essential for the central government to shift net investment from one region to the other region?

For the above (1), the capital-labor ratio can be higher or lower in capitalgoods, but the higher the capital-labor ratio in capital-goods the more effective is the execution of vital policies. And, the literature always uses the capital-labor ratio, but this ratio increases even under convergence and cannot be a final indicator. I use, instead, the capital-output ratio. This ratio will even be decreased after an economy is bubbled and/or beyond the limit of growth, as seen in the Japanese economy. I stress that the relationship between the capital-output ratio and *beta*^{*} under convergence is determined by the combination of such parameters as the growth rate of population/employed persons, the relative share of profit, the rate of saving or the rate of investment (after adjusting the balance of payment in an open economy).

For the above (2), the relative share of profit, α , is historically constant by country as shown by Kaldor [1978] and Charles Jones [1992]. However, the relative share of profit differs greatly by country and region, apart from the literature. This is important in that α is closely related to the rate of profit and, accordingly, the neutrality of financial assets to avoid assets-deflation and deflation [2]. One of assumptions in the two sector model raised by Uzawa and indicated by Solow is that the relative share of profit equals the rate of saving, but this golden assumption must be erased in the real world: e.g., the rate of saving/ investment is 40% in recent China and the relative share of profit is less than 10%. My two region model holds without such assumption as the golden rule, free from any condition for the relative share of profit, the rate of profit, and the growth rate of output each under convergence, except for upper limit of the capital-output ratio. Note that in some seashore regions of China, the capital-output ratio suddenly approaches the limit of growth, although there is still enough room for avoiding its possibility using vital policies.

For the above (3), the shift of capital and/or labor is related to the redistribution of resources and plays an important role for sustainable growth. In this

respect, we must learn the propositions set from international trade. If this shift is beyond the range of a soft-landing, convergence will be disturbed and thus we must take advantage of the different results of simulation. Conclusively speaking, human capital is significantly important and China can definitely use more human capital instead of physical capital since the quality of labor is attractive. The results are shown by the changes in *beta* under the current situation and *beta*^{*} under convergence. Important economic policies are suggested: 1. Human capital accumulation should be accelerated through education, by taking advantage of a planned economy, in particular, for inland regions. Inland regions can accelerate capital-saving technology, which is a natural base for sustainable growth. 2. My model numerically expresses human capital using *beta*

3.2 How to structurally reply to the three questions

Then, how can I structurally reply to the above research questions? If I use both the relative share of profit that shows the elasticity of substitution and the relationship between the ratio of wages to rentals, w/r, and the labor-capital ratio, 1/k, I can numerically show the whole picture behind the above each idea. Let me explain the structure of the elasticity of substitution (as the relative share of profit, α). The elasticity of substitution, α , was first discussed by Hicks [1932] and Lerner [1933–34] explained it using a diagram. Findley [1960] reviewed the distribution shares, citing the above two papers. I stress that Findley [1960] clarified a base of international trade, by illustrating the relationship between quantity (factor productivities) and quality (prices) using the elasticity of substitution. I pay attention to the changes in the relative share of profit, by applying my model to China 2002 data and its various cases that shift resources between two regions. The following facts are clarified from the above work.

1. Theoretically, if w/r and/or 1/k increase, the elasticity of substitution, α ,

Papers of the Research Society of Commerce and Economics, Vol. XXXXV No. 2 increases. The value of α does not change in the case of total region or commodity of a country, but this α differently changes in each region or commodity. I can now reply to Solow's [1958] suspicion about the empirical constancy of α in an economy.

- In both total economy and its sub-economy by region, the value of *w/r* increases as an economy grows, where empirically wages increases and rentals reversely decreases. At the same time, the capital-labor ratio continuously increases (or, the labor-capital ratio continuously decreases). This implies that it is difficult for an economy to empirically increase *α* or decrease *k* under the increase in *w/r*.
- In total economy and sub-economy, the capital-output ratio, Ω, has its upper limit, say, between 3.0 and 4.0. An economy after reaching this limit suffers from long difficult times as seen in the Japanese economy after the 1990s, resulting in a slower increase in the capital-labor ratio. The value of Ω only decreases by improving *beta*^{*} and *beta*.

4. Empirical results

I will reply to my research questions applying China data of IFS/IMF to my two region model:

The level of capital-output ratio, Ω, depends on the relationship between capital, labor, and output by region. For instance, Ω in total China is 2.342 (on average) in 2002, when I estimate the capital-labor ratio from the above-mentioned structure of the elasticity of substitution. Total region is divided into (1) a higher Ω region (H-region) than average and (2) a lower Ω region (F-region) than average. The H-region assumes to produce capital-goods and F-region assumes consumption-goods, but this assumption can be reversed by adjusting the initial data. The shift of capital from the H-region to the F-region lowers Ω in the H-region and raises Ω in the F-region, under

the averaged Ω being unchanged: if $K_H(0)$ decrease by 20%, $\Omega_H(0)$ changes from 3.345 to 2.649 and $\Omega_F(0)$ changes from 1.950 to 2.220. This result is essentially good for sustainable growth in China.

- The rate of technological progress and, accordingly, the growth rate of output under convergence, g_Y^{*}, differs by the level of the rate of saving or the investment ratio, *i*. The higher the investment ratio, the higher the growth rate: if *i*=0.1, g_Y^{*}=0.04 and if *i*=0.4, g_Y^{*}=0.14, where *beta*^{*} is roughly 0.6–0.7. If *beta*^{*}=1 or under no technological progress, g_Y^{*}=0.04 regardless of the value of the net investment ratio. These results, to some extent, differ by the output-share of capital-goods and the level of the investment ratio.
- 3. In the above (3), it is better to shift capital or labor in one region to the other. And, in my two region model, similar to my two country model, I can basically confirm the propositions raised by Hecscher-Ohlin, Rypbc-znski, (using the coefficients of capital and labor inputs) and Stolper-Samuelson (using prices of factor inputs and outputs) under respective conditions. Leontief's finding holds (not as a paradox) if the capital-saving industry (as traditionally used) is replaced by the human capital-augmented industry, where my endogenous growth model expresses human capital by the technology that uses the investment ratio and *beta*^{*}.
- 4. For the neutrality of financial assets in my model, I use the Penrose curve and the Penrose-shadow curve. These are related to both *beta*^{*} and the central bank interest rate. According to Rypbcznski, both wages and rentals (i.e., the rate of profit) are respectively set equal by region (for this, I use goal seek in the Excel), but I only use the equal rentals for two regions to compare rentals with the central bank interest rate. If its imbalance between two regions is above a limit, the neutrality of financial assets is not guaranteed, resulting in assets-deflation/inflation.

5. Conclusions: towards vital economic policies

Finally, for China what economic policies are urgently required? For this, I summarize the values of the partial derivative of *beta*^{*} to the capital-output ratio, $\partial \Omega^* / \partial \beta^*$, using the equation [4, Eq. 22] under convergence. I calculate the values of $\partial \Omega^* / \partial \beta^*$, using China 2002 data, where I need to fix the three parameters of the investment ratio, *i*, the growth rate of population, *n*, and the relative share of profit, α . Generally, "the higher the *beta*^{*} the higher Ω^* ," in particular, when *beta*^{*} is beyond 0.8, the value of $\partial \Omega^* / \partial \beta^*$ becomes rapidly higher and when *beta*^{*} is below 0.7, the value of $\partial \Omega^* / \partial \beta^*$ is slightly and linearly increasing as *beta*^{*} increases. It is strongly suggested that *beta*^{*} should be less than 0.9. Furthermore, I can now change the value of one parameter: e.g., *i*=0.1, *i*=0.2, *i*=0.3, and *i*=0.4, where the values of the partial derivative spread widely and accelerate the above tendency, depending on the role of each parameter under convergence. Thus, I can suggest useful economic policies by parameter and by combination of parameters.

- 1. For the change in the investment ratio, *i*: The **higher** the investment ratio the higher the value of $\partial \Omega^* / \partial \beta^*$.
- 2. For the change in the growth rate of population, *n*: The **lower** the growth rate of population the higher the value of $\partial \Omega^* / \partial \beta^*$.
- 3. For the change in the relative share of profit, α : The lower the relative share of profit the higher the value of $\partial \Omega^* / \partial \beta^*$.
- 4. For the change in the investment ratio=the relative share of profit (in the golden age): the **lower** the *i*= α the higher the value of $\partial \Omega^* / \partial \beta^*$.

Generally (except for $\Omega^* < 1$), the lower the capital-output ratio the more sustainable is growth. Therefore, the above results suggest that the lower the investment ratio and the higher both the population growth and the relative share of profit the more sustainable growth. In the golden age, the higher $i=\alpha$ the

more sustainable growth, without contradiction. I indicate here that the investment ratio is extremely high in the current China and if this ratio becomes lower the capital-output ratio must become unfortunately higher due to a higher β^* . In this respect, a soft-landing is delicate to manage.

Now dividing China as a whole into two regions, the above findings are really applicable to both regions and we must first keep in mind the following economic policies:

- 1. In seashore regions, the capital-output ratio is already beyond 2.0. This implies that the Chinese economic growth, as a whole, should be adjusted and lowered, apart from some shortages of resources. If the investment ratio is less than 20%, the situation will be stable. If it is 10%, the golden age is guaranteed, where $g_{Y}^{*}=r^{*}$. However, if the investment is suddenly lowered, the capital-output ratio will increase as seen from the derivative analysis. Thus, the decrease in the capital-output is only possible if both capital and consumer commodities are more human-capital oriented through education and R & D, decreasing *beta*^{*}. If China cannot control the capital-output ratio, sustainable growth will not be successful, similar to the Japanese economy after the 1990s.
- 2. Capital resources have recently been shifted from seashore regions to inland regions, but without accurate measurements. We can measure the structure of the elasticity of substitution (Figures 1 and 2) and the partial derivatives by the investment ratio between the capital-output ratio and *beta*^{*} (omit Figure 3). The difference of the capital-output ratio between seashore and inland regions should be within the ranges of the situation where the rate of profit under convergence is within 10% above the central bank interest rate (paying attention to the maximum limit of the role of financial assets).
- 3. If labor becomes more effective due to education, the difference of wages between seashore and inland can be allowed (apart from factor price equal-

Papers of the Research Society of Commerce and Economics, Vol. XXXXV No. 2 ization theorem). However, it needs an assumption that the two region model holds: if the difference of wages is enlarged, the economy will beyond the limit of a soft-landing. In this sense, the effective cooperation between capital and labor is still urgent by region.

In short, China can neutralize diminishing returns by improving the quality of human capital. For inland regions, economies need physical capital for infra structure, yet both capital- and consumer-goods can be more capital-saving oriented. This ascertains the neutrality of financial assets and, accordingly, sustainable growth.

References: [1] "What Numerically Determines the Differences between Catching Up and Endless Poverty in African Countries?, Cork, Ireland (Procedures, IARIW, 22p.), *International Association for Research in Income and Wealth*, Aug 2004. [2] "Risk of Growth in My Endogenous Growth Model: Integrating the Penrose Curve with the Petersburg Paradox," *Modelling and Analysis of Safety and Risk in Complex Systems, International Scientific School Conference*, St. Petersburg, Russia (Procedures, ISSC, 16p.), June 2004. [3] "*Furthering the Role of Corporate Finance in Economic Growth*," The University of Auckland (PhD thesis), 129p., Nov 2003. [4] "Basics of An Endogenous Growth Model: the Optimum CRC^{*} Situation and Conditional Convergence," *Journal of Economic Sciences* 7 (2), 51–80, Feb 2004. [5] Motoshige Ito, July 5, 2004, *Nikkei*, p. 24. [6] "Endogenous Growth in China National Accounts: for Lasting Stable Growth by Region," *Papers of the Research Society of Commerce and Economics*, 44 (1), 201–287, Sep 2003 (for data and ratios of national accounts in China in 1997–2001 using 31 regions, see the paper). [7] Oniki, H., and H. Uzawa, "Patterns of Trade and Investment in a Dynamic Model of International Trade," *Review of Economic Studies* 32 (1): 15–18, Jan, 1965.

Acknowledgement: I am thankful to Prof. Kazuhiro Igawa and Prof. Toshimi Fujimoto in various respects.

Contents of the tables in this note:

The following tables are divided into three parts:

(1) Tables 1 to 4 (T1-4): capital and/or labor increase under the situation that the capital-output ratio for capital-goods, Ω_{H} , is higher than that for consumption-goods, Ω_{F} ,

resulting in a higher increase in total output than the initial total output: $\Omega_H > \Omega_F$ and $Y > Y_{casel}$. T4 introduces the relative price level, where $p = P_H/P_F$, resulting in the same levels of rents and wages in both capital- and consumption-goods regions.

- (2) Tables 5 to 11 (T5-11): capital and/or labor decrease under the situation that the capital-output ratio for capital-goods, Ω_H, is higher than that for consumption-goods, Ω_F, maintaining the same total output as the initial total output: Ω_H>Ω_F and Y=Y_{casel}. T9-11 introduce the relative price level, where p=P_H/P_F, resulting in the same levels of rents and wages in both capital and consumption-goods regions.
- (3) Tables 12 to 16 (T12-16): capital and/or labor decrease under the capital-output ratio for capital-goods, Ω_{H} , is lower than that for consumption-goods, Ω_{F} , maintaining the same total output as the initial total output: $\Omega_{H} < \Omega_{F}$ and $Y = Y_{casel}$. T16 introduces the relative price level, but cannot result in the same values of rents and wages in both capital- and consumption-goods regions. This is because the capital-output ratio turns from a situation of $\Omega_{H} < \Omega_{F}$ to a situation of $\Omega_{H} > \Omega_{F}$, which finally violates the vital assumption of non-reversal of factor intensity approved in international trade theory.

I interpret the results of the above tables as follows:

1. The two-region model in this note basically follows the framework, assumptions, and propositions found in international trade theory. However, these propositions were originally approved under fixed technology, exogenous growth or neutral technological progress. I measure endogenous changes in the rate of technological progress but these changes do not basically alter the above propositions and vividly clarify the relationship between variables. Also I find that there are some differences between two-regions, two-goods/commodities, two-countries, and two-sectors, but these differences can be solved using different assumptions (see below).

2. In this note, I pay attention to the shift of capital or labor between two regions under fixed total capital and labor (see T5-T16). This is most closely related to how to equalize poor and rich, but the purpose of this note is to clarify, by shifting resources, how to better maintain a sustainable steady growth under a given capital and labor. It is true that China can maintain a stable growth by gradually shifting resources between two regions, where each region implies the aggregate of provinces, seashore and inland.

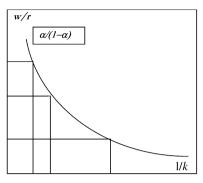
3. The two-region model in this note does not use the recursive programming but equations derived from the initial given ratios/parameters. However, in both cases, the framework must solve "falling into circular calculation." For this, I watch the relationship between $(\Pi_H + W_H) + (\Pi_H > W_F) = \Pi + W = Y_{(hori.)}$ as a horizontal calculation and $Y_H + Y_F = Y_{(vert.)}$ as a vertical calculation. Usually, when a relative price level, $p = P_H/P_F$, is given under given Y_H and

 Y_{F} , the value of $Y_{(hori.)}$ is not equal to the value of $Y_{(vert.)}$. The extent of this inequality depends on various combinations of the initial parameters. In order to obtain an equal relationship between, $Y_{(hori.)}$ and $Y_{(vert.)}$, we have to finally adjust the relationship using "goal seek" in the Excel. As results, the rent for capital-goods will be equal to the rent for consumption-goods and, at the same time, the wage rate for capital-goods will be equal to the wage rate for consumption-goods. This corresponds with factor price equalization theorem of Hecksher-Ohlin-Stolper-Samuelson (or Rybczynski as reciprocity relation). If this theorem does not hold, we must confirm the existence of the reversal of factor intensity. Empirically, I find that it is much easier to approach $Y_{(hori.)}=Y_{(vert.)}$ under a stable condition of $\Omega_{H} > \Omega_{F}$. In this respect, I prefer Uzawa [1961] that insists on the condition of $\Omega_{H} > \Omega_{F}$ to Findlay [1965] that violates the condition of $\Omega_{H} > \Omega_{F}$.

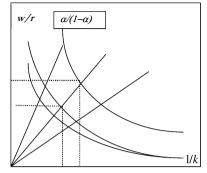
4. In the two-region model of this note, we can compare the results under $Y>Y_{(case1)}$ of T1 to T4 with the results under $Y=Y_{(case1)}$ of T5 to T16. The two region-model usually holds under $Y=Y_{(case1)}$, but in international trade theorem a condition of $Y>Y_{(case1)}$ must be used. Nevertheless, we can solve the relationship between these two different cases by setting some assumptions related to saving and investment, each net. In international trade theorem, the difference between saving and investment is equal to the balance of payment, which in turn is equal to the sum of the difference between private saving and investment (as budget surplus or deficit). For T 11 and T12, I show this framework, and for other tables, I neglect the difference between saving and investment under an assumption that the difference between ΔY_H that produces capital-goods and $\Delta K = \Delta K_H + \Delta K_F$ as the total net investment for both capital-goods and consumption-goods will be absorbed by foreign trade (exports and imports including services) or internal trade. Note that the idea of $\Delta Y_H = \Delta K = \Delta K_H + \Delta K_F$ comes from Uzawa [1961]. In the future I must reformulate Oniki and Uzawa [1965] in continuous time to the two-region model in discrete time, clarifying the differences.

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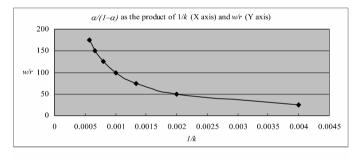
Elasticity of substitution is constant, where each rectangle shows the same area (see Findley [1960, p. 168].

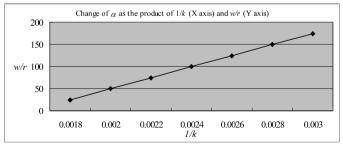


Elasticity of substitution increases as w/r and/or 1/k.

If r/w is used, 1/k is replaced by k.

Figure 1 The relationship between the ratio of wages to rentals, w/r, and the labor-capital ratio, 1/k





Note: The higher the rate of wages to rentals, w/r, the higher the capital-labor ratio, which in turn increases the capital-output ratio. It is strongly suggested that capital should be shifted from physical to human capital.

Figure 2 The structure of the elasticity of substitution

Appendix A The relationship between the relative price level, the wage rate, and the rental

The price of capital-oriented goods, $P_H: P_H = a_{KH} \cdot r + a_{LH} \cdot w$. (1)

The price of labor-oriented goods, $P_F: P_F = a_{KF} \cdot r + a_{LF} \cdot w.$ (2)

Where, a_{KH} and a_{LH} are each capital and labor per one unit of output in the capital-oriented goods region, and a_{KF} and a_{LF} are each capital and labor per one unit of output in the capital-oriented goods region.

A common rental (the rate of profit) is shown by r and a common wage rate is shown by w.

The above equations come from Stolper-Samuelson [1941] and Ronald Jones [1965].

The common rates of r and w are each shown as:

$$r = \frac{P_H + w / y_H}{\Omega_H} = \frac{P_F - w / y_F}{\Omega_F} \text{ and } w = y_F (P_F - \Omega_F \cdot r) = y_H P_H - \Omega_H \cdot r.$$

Therefore,
$$r = \frac{y_F \cdot P_F - y_H \cdot P_H}{\Omega_F \cdot y_F - \Omega_H \cdot y_H} = \text{or } r = \frac{(y_F / y_H)P_F - P_H}{\Omega_F (y_F / y_H) - \Omega_H}.$$
 (3)

And
$$w = \frac{y_H \cdot y_F(\Omega_H \cdot P_F - \Omega_F \cdot P_H)}{\Omega_H \cdot y_H - \Omega_F \cdot y_F} = \text{or } w = \frac{P_H - P_F \cdot \Omega_H / \Omega_F}{1 / y_H - (\Omega_H / \Omega_F) y_F}.$$
 (4)

Interesting to say, both Eq. 1 and Eq. 2 become one in my model. The relative price level, p, is defined as P_H/P_F .

Then, $p \equiv \frac{P_H}{P_F} = \frac{1}{1} = 1$ holds, when we add related values of the capital-oriented goods region/sector to those of the labor-oriented goods region/sector. Therefore, it is allowed to aggregate two sets of the Cobb-Douglas production functions: $Y_{Total} = Y_H + Y_F$ or $y_{Total} = y_H + y_F$.

Appendix B-1 The relationship between the rate of technological progress under the current and convergence situations (Kamiryo, [3, 4]; Kamiryo and Fujumoto [2005])

The current/actual rate of technological progress: $g_{A(a)} = g_{Y(a)} - \alpha \cdot g_{K(a)} - (1-\alpha)n$.

The rate of technological progress under convergence: $g_A(t) = i_A \cdot k(t)^{\alpha - \delta}$, where $\alpha = \delta$. (6)

The current/actual structural reform parameter: $\beta_{actual(\delta > \alpha)} = 1 - (g_{A(a)} \cdot k(0)^{\delta - \alpha})/i$.

(7)

The parameter to neutralizing diminishing:
$$\delta = \frac{LN(i(1-\beta_a)/g_{A(a)})}{LN(k(0))} + \alpha.$$
(8)

Or,
$$\delta = \frac{n + \alpha(i - i \cdot \beta^* - n)}{i(1 - \beta^*)}$$
, which is equal to Eq. 8. (9)

Appendix B-2 For the neutrality of financial assets and the estimation of capital stock (Kamiryo, [1],[2]):

$$\alpha = k(0) \ x_0 = \Omega(0) \ (c_{CB} \cdot r_{CB}), \text{ where } r(0) = r^* = c_{CB} \cdot r_{CB}.$$
(10)

$$k_e^* = \alpha / x_e^*$$
, under convergence, where $k_e^* = \Omega^{*\frac{1}{1-\alpha}} = \Omega(0)^{\frac{1}{1-\alpha}}$. (11)

If
$$k(0) / k_e^*$$
 is compared with $x_0 / x_e^*, \frac{k(0)}{k_e^*}, \frac{x_0}{x_e^*} = 1$ or $\frac{k(0)}{k_e^*} = \frac{x_e^*}{x_0}$ holds. (12)

Appendix B-3 For the relationship between depreciation, the depreciation rate, capital, investment, and the growth rate of capital under convergence (Kamiryo, [1]):

I set up a new concept for investment: net investment instead of gross investment. Text-books use gross investment and, accordingly, the growth rate of gross investment to capital. I raise a question: Capital (stock) is one after deducting depreciation and gross investment is used. How can these two be integrated? The literature uses a basic formula (see D. W. Jorgenson and Z. Griliches [1967, Eq. 14 on page 277]):

$$K_{t+1} = I_t + (1 - \delta) K_t.$$
(13)

This investment is gross and its depreciation begins from the next year. As a

result, for example, the speed of convergence by Barro and Sala-i-Martin [1995] is shown as $\beta = (1 - \alpha)(x + n + \delta)$. However, in national accounts saving is used for investment, but depreciation (capital consumption) is included in gross domestic products while saving and consumption constitute national income or disposable income. My model uses disposable income/output, where saving cannot include depreciation: the sum of saving and depreciation corresponds with gross investment. My new concept, net investment, assumes that depreciation immediately begins in the same year when investment occurs. Thus, the above equation is replayed, using the depreciation rate,

 $\delta_{DEP} = D_{EP} / (I_{t(gross)} + K_t), \text{ or depreciation, } D_{EP} = \delta_{DEP} (I_{t(gross)} + K_t),$ (14) by the following equations: $I_{t(net)} \equiv I_{t(gross)} - D_{EP}$ and, $K_{t+1} = I_{t(gross)} - D_{EP} + K_t$,

where $D_{EP} \neq \delta_{EP} \cdot K_t$ or all the fixed assets including new investment are depreciated. This rate is new and consistent with a net concept of investment which I need. This rate differs, for convenience, from such depreciation rate of the text-books equation as $\delta = D_{EP} / K_t$, where gross investment is not included. Then I assume that the depreciation rate is equal to the growth rate of capital under convergence. This implies that the faster the technological progress the higher the depreciation rate since the growth rate of capital is almost equal to the growth rate of technological progress under convergence.

In both cases, gross and net investment, depreciation or the depreciation rate must be given in advance. Thus, a tentatively given depreciation rate is adjusted in my model after measuring the growth rate of capital so that both rates are almost the same. These problems are discussed in a separate paper comparing many countries each other.

Finally, the growth rate of capital is shown as $g_{Kt} = (K_{t+1}) - K_t / K_t$, where capital, both K_{t+1} and K_t , are after depreciation even under convergence.

	T1 Case 1. Both regions have different rates of profit and the wage rates Y(0) up with p=1 Country=capital=goods+consumption-goods: T=H+F 6144										
Country=	capital-g	oods+con	sumption	-goods: T	`=H+F		6144		A(0)=k(0)	$)^{1-\alpha}/\Omega(0)$	
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)	
0.00755	1295	8500	295	197	492	5652	6144	2464	2169	4.0817	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	SΠ	s_H	s _{SII/Y}	s _{SH/Y}	w(0)	
0.08000	1.38346	0.05782	6.5642	4.7448	0.40105	0.6000	0.37085	0.04800	0.35305	4.3652	
H: capita	l-goods		s=S/Y	0.40105	0.26068	0.14037		0.44115			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{II}(0) \neq \Delta K($	S(0)	$S_H(0)$	A(0)	
0.00755	90.64	3500.00	89.69	38	128.13	793.42	921.55	1087.01	997.32	6.1175	
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s _H	S _{ST/Y}	S _{SH/Y}	W _{H(0)}	
0.13903	3.79797	0.03661	38.6130	10.1668	1.17955	0.7000	1.19891	0.09732	1.08223	8.7532	
F: consu	nption-go	oods	c=1-s	0.59895							
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	· Π(0)	W(0)	$Y_F(0)$	S(0)	$S_H(0)$	A(0)	
0.00755	1204.26	5000.00	205.22	158.17	363.38	4859.07	5222.45	1377.02	1171.80	3.9277	
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	s _H	S _{STI/Y}	S _{SH/Y}	W _{F(0)}	
0.06958	0.95740	0.07268	4.1519	4.3367	0.26367	0.5647	0.23356	0.03930	0.22438	4.0349	
Cases corr	respond wi	ith Hecksh	er-Ohlin b	y region.			$Y_{H(0)}\!/Y_{F(0)}$	0.17646	Uzawa [196	2]:Ω _H >Ω _F	

1. Basic variables and parameters under convergence

	$g_{\gamma} *= g_{\kappa}^{*}$	$g_A *$	g_y^*	\varOmega^*	r^{*}	i	$\beta^*{}_{(\delta=\alpha)}$	n	α
Case 1. Total	0.1469	0.1272	0.1383	1.3835	0.0578	0.33044	0.6150	0.00755	0.08000
H: capital-goods	0.2084	0.1716	0.1993	3.7980	0.0366	0.96311	0.8218	0.00755	0.13903
F: consumption-goo	0.1200	0.1039	0.1116	0.9574	0.0727	0.21880	0.5252	0.00755	0.06958
Case 2. Total	0.1370	0.1175	0.1285	1.5447	0.0555	0.32913	0.6430	0.00755	0.08572
H: capital-goods	0.2173	0.1720	0.2082	4.7397	0.0366	1.20190	0.8569	0.00755	0.17351
F: consumption-goo	0.0934	0.0793	0.0852	0.9574	0.0727	0.16870	0.5301	0.00755	0.06958
Case 3. Total	0.1423	0.1238	0.1337	1.2821	0.0578	0.30622	0.5957	0.00755	0.07414
H: capital-goods	0.1847	0.1421	0.1758	3.5667	0.0537	0.80072	0.8225	0.00755	0.19146
F: consumption-goo	0.1246	0.1100	0.1162	0.8852	0.0607	0.22031	0.5008	0.00755	0.05375

2. Basic variables and parameters under the current situation (delta >alpha)

	g Y(a)	$g_{K(a)}$	g A(a)	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)		
Case 1. Total	0.0800	0.3000	0.0491	0.0718	0.0890	0.84900	-0.2340	6.5642	4.7448		
H: capital-goods	0.0400	0.4000	0.0255	0.0322	0.0704	0.97943	-0.1576	38.6130	10.1668		
F: consumption-goo	0.0108	0.1039	-0.0034	0.0032	0.0956	1.01633	-0.4911	4.1519	4.3367		
For min capital goo	od growth	0.0578	-								
Case 2. Total	0.0800	0.3000	0.0474	0.0718	0.0874	0.85554	-0.2125	7.3751	4.7745		
H: capital-goods	0.0400	0.4000	-0.0356	0.0322	0.0424	1.01775	-0.1609	50.1969	10.5908		
F: consumption-goo	0.0081	0.1120	-0.0067 [0.0006	0.1037	1.04158	-0.5115	4.1519	4.3367		
C 2	0.0800	0.3000	0.0508	0.0718	0.0907	0.82920	-0.2335	6.0057	4.6844		
Case 3. Total											
H: capital-goods	0.0400	0.4000	-0.0427	0.0322	-0.0134	1.02522	-0.2027	38.6130	10.8260		
F: consumption-goo	0.0048	0.1044	-0.0079	-0.0027	0.0961	1.03804	-0.5372	3.7745	4.2641		
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \beta^*)) \beta_{actual(\delta > \alpha)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta^* - n))/(i(1 - \alpha))/(i(1 - \alpha$											
Heckscher-Ohlin											
3. Relationships between quantities: $K_H \& K_F$ and $L_H \& L_F K = (a_{KH}y_H)L_H + (a_{KF}y_F)L_F K = a_{KH}Y_H + a_{KF}Y_F$											

5. Relat	ionships between	quantities	$\mathbf{K} \mathbf{K}_H \propto \mathbf{I}$	\mathbf{x}_F and \mathbf{z}	$L_H \propto L_F$	$\kappa - (a_{KH}, y_{H})L$	$H^{+}(a_{KF}, y_{F}) \square_{F}$	$\mathbf{K} = a_{\mathrm{KH}} 1_{\mathrm{H}} + a_{\mathrm{KH}}$	KF ^{, I} F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			\mathbf{y}_{H}	$\boldsymbol{a_{LH}}{=}1/y_{H}$	$L=(a_{LH}y_{H})L_{I}$	$+(a_{LF}y_F)L_F$	$L=a_{LH}Y_{H}+a$	LF-YF
For L,	$a_{LH} = 1/y_H - a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	$y_{\rm F}$	$\boldsymbol{a_{LF}}{=}1/\boldsymbol{y_{F}}$	L _H &L _F	$Y_{H}\&Y_{F}$	$K = K_H + K_F$	$L=L_H+L_F$
Case 1.	Total	1.3835		4.7448	0.21076	1295	6144	8500	1295
	H: capital-goods	3.7980		10.1668	0.09836	90.64	921.55	3500	91
	F: consumption-good	ods	0.9574	4.3367	0.23059	1204.26	5222.45	5000	1204
Case 2.	Total	1.5447		4.7745	0.20945	1295	6182	9550	1295
	H: capital-goods	4.7397		10.5908	0.09442	90.64	959.98	4550	91
	F: consumption-good	ods	0.9574	4.3367	0.23059	1204.26	5222.45	5000	1204
Case 3.	Total	1.2821		4.6844	0.21348	1415	6630	8500	1415
	H: capital-goods	3.5667		10.8260	0.09237	90.64	981.30	3500	91
	F: consumption-good	ods	0.8852	4.2641	0.23451	1324.68	5648.61	5000	1325

T1 Case 2	Uzav	va [1962]								
Country=	capital-g	oods+con	sumption	-goods: T	=H+F	6182	$\Delta Y(0)/Y(0)$	0.00626	A(0)=k(0	$\left(1-\alpha/\Omega(0)\right)^{1-\alpha}$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	9550	318	212	530	5652	6182	2464	2146	4.0229
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_H	$s_{S\Pi/Y}$	S _{SH/Y}	w(0)
0.08572	1.54470	0.05549	7.3751	4.7745	0.39855	0.6000	0.36594	0.05143	0.34712	4.3652
H: capita	l-goods		$\Delta K/K$:	0.3	0.3		$\Delta Y_{H(0)}/Y_{H(0)}$	0.04171		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	90.64	4550.00	116.60	50	166.57	793.42	959.98	1413.11	1296.52	5.3684
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}
0.17351	4.73966	0.03661	50.1969	10.5908	1.47202	0.7000	1.53727	0.12146	1.35056	8.7532
F: consur	nption-go	ods					$\Delta Y_{F(0)}/Y_{F(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)
0.00755	1204.26	5000.00	201.37	162.01	363.38	4859.07	5222.45	1050.92	849.54	3.9277
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	$W_{F(0)}$
0.06958	0.95740	0.07268	4.1519	4.3367	0.20123	0.5542	0.16920	0.03856	0.16267	4.0349
							$Y_{H(0)}/Y_{F(0)}$	0.18382	l	

4. The Penrose curve, B_K , and the assets valuation ratio, v

	Ω^*	I/K	g_{κ}^{*}	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v=1/\beta^*$
Case 1. Total	1.3835	0.2388	0.1469	1.6261	0.0578	0.0356	1.6261	1.0000	1.6261
H: capital-goods	3.7980	0.2536	0.2084	1.2168	0.0366	0.0301	1.2168	1.0000	1.2168
F: consumption-goo	0.9574	0.2285	0.1200	1.9039	0.0727	0.0382	1.9039	1.0000	1.9039
Case 2. Total	1.5447	0.2131	0.1478	1.4420	0.0620	0.0430	1.4420	1.0000	1.5551
H: capital-goods	4.7397	0.2536	0.2168	1.1698	0.0366	0.0313	1.1698	1.0000	1.1671
F: consumption-goo	0.9574	0.1762	0.1200	1.4679	0.0727	0.0495	1.4679	1.0000	1.8866
Case 3. Total	1.2821	0.2388	0.1460	1.6359	0.0536	0.0328	1.6359	1.0000	1.6787
H: capital-goods	3.5667	0.2245	0.2214	1.0139	0.0537	0.0529	1.0139	1.0000	1.2158
F: consumption-goo	0.8852	0.2489	0.1182	2.1065	0.0607	0.0288	2.1065	1.0000	1.9967

.____.

5. The relative pr	5. The relative price level: real vs. nominal (a) Inf. or def (b) (c)												
	r(0)	r=∂Yt/∂Kt	P _Y =r(0)/r real	r _{M(0)} given	$p_{Y}=r_{M(0)}/r_{rea}$	r_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)				
Case 1. Total	0.05782	0.05782	1.0000	0.0330	0.5707	0.0356	0.9280	0.0228	1.4462				
H: capital-goods	0.03661	0.03661	1.0000	0.0330	0.9014	0.0301	1.0969	0.0173	1.9064				
F: consumption-goo	0.07268	0.07268	1.0000	0.0330	0.4541	0.0382	0.8645	0.0261	1.2647				
Case 2. Total	0.05549	0.05549	1.0000	0.0330	0.5947	0.0398	0.8283	0.0228	1.4462				
H: capital-goods	0.03661	0.03661	1.0000	0.0330	0.9014	0.0314	1.0520	0.0245	1.3477				
F: consumption-goo	0.07268	0.07268	1.0000	0.0330	0.4541	0.0385	0.8566	0.0214	1.5394				
Case 3. Total	0.05782	0.05782	1.0000	0.0330	0.5707	0.0319	1.0338	0.0287	1.1511				
H: capital-goods	0.05368	0.05368	1.0000	0.0330	0.6148	0.0442	0.7474	0.0245	1.3477				
F: consumption-goo	0.06073	0.06073	1.0000	0.0330	0.5434	0.0304	1.0851	0.0236	1.3969				

Note: If the price level of output, P_y , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial Yt/\partial Kt = \alpha AtKt^{\alpha d-1}Lt^{1-\alpha}$ and w(real)= $\partial Yt/\partial Lt = (1-\alpha)AtK^{\alpha}Lt^{\alpha}$

6. Relat	ionships between price leve	ls: r _H &)	$_H$ and r_F	$d r_F \& w_F \text{ for } P_F \qquad \text{Rybczynsl}$			
For H,	$P_H = a_{KH} \cdot r_H + a_{LH} \cdot w_H$ When real	=nominal, th	e price leve	l is 1.0.	The e	lasticity	of substitution is 1.0.
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$ r_H	r_F	w_H	W_F	P_{H}	P_F	$\boldsymbol{p} = \boldsymbol{P}_H / \boldsymbol{P}_F$
Case 1.	Total						
	H: capital-goods 0.03661		8.7532		1		1
	F: consumption-goods	0.07268		4.0349			1
Case 2.	Total						
	H: capital-goods 0.03661		8.7532		1		1
	F: consumption-goods	0.07268		4.0349			1
Case 3.	Total						
	H: capital-goods 0.05368		8.7532		1		1
	F: consumption-goods	0.06073		4.0349			1

T1 Case 3	T1 Case 3. L increases in consumption-goods by 10% Uzawa [1962]																				
Country=	-capital-g	oods+con	sumption	-goods: T	=H+F	6630	$\Delta Y(0)/Y(0)$	0.07909	A(0)=k(0	$\left(1-\frac{\alpha}{\Omega}\right)^{1-\alpha}$											
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	S _H (0)	A(0)											
0.00755	1415	8500	295	197	492	6138	6630	2464	2169	4.1014											
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s_H	$\mathbf{s}_{\mathrm{SII/Y}}$	s _{SH/Y}	w(0)											
0.07414	1.28207	0.05782	6.0057	4.6844	0.37165	0.6000	0.34240	0.04448	0.32717	4.3371											
H: capita	l-goods						$\Delta Y_{H(0)}/Y_{H(0)}$	0.06484	1												
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)											
0.00755	90.64	3500.00	131.52	56	187.88	793.42	981.30	949.31	817.79	5.3786											
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s _H	$s_{S\Pi/Y}$	S _{SH/Y}	w _{H(0)}											
0.19146	3.56670	0.05368	38.6130	10.8260	0.96740	0.7000	0.96235	0.13402	0.83338	8.7532											
F: consu	mption-go	oods	$\Delta L/L$:	0.1		0.1	$\Delta Y_{F(0)}/Y_{F(0)}$	0.08160	1												
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)											
0.00755	1324.68	5000.00	163.39	140.24	303.63	5344.98	5648.61	1514.72	1351.33	3.9703											
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	SΠ	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	w _{F(0)}											
0.05375	0.88517	0.06073	3.7745	4.2641	0.26816	0.5381	0.24636	0.02893	0.23923	4.0349											
Using goa	ıl seek, wh	ere w _F app	roaches w	=w _H			$Y_{H(0)}/Y_{F(0)}$	0.17372													
7. The n	eutrality	of financ	ial assets	and the	coeffcient	t <i>x=r/w</i>	ke*=Ω*	^{(1/(1-α))}	xe*/x	₀ =k(0)/ke*											
	•					1				7. The neutrality of financial assets and the coefficient $x=r/w$ ke*= $\Omega^{*}(1/(1-\alpha))$ x _e */x ₀ =k(0)/ke*											

	r CB goal see r	M^* at β^*	$r^{*/r}_{M^{*}}$	$c_{CB} = r_M * / r_{CB}$	α_x	$x_0 = \alpha_x / k(\theta)$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_e^*
Case 1. Total	0.0228	0.0356	1.6261	1.55842	0.0870	0.0132	1.4231	0.0611	0.2168
H: capital-goods	0.0173	0.0301	1.2168	1.73793	0.1615	0.0042	4.7113	0.0343	0.1220
F: consumption-goo	0.0261	0.0382	1.9039	1.46297	0.0748	0.0180	0.9543	0.0784	0.2298
goal seek goal seek $a_x = a/(1-a)$									
Case 2. Total	0.0228	0.0398	1.4420	1.88294	0.0938	0.0127	1.6090	0.0583	0.2182
H: capital-goods	0.0245	0.0314	1.1698	1.27800	0.2099	0.0032	6.5707	0.0320	0.1007
F: consumption-goo	0.0214	0.0385	1.4679	2.30949	0.0748	0.0180	0.9543	0.0784	0.2298
Case 3. Total	0.0287	0.0319	1.6359	1.14262	0.0801	0.0145	1.3078	0.0612	0.2365
H: capital-goods	0.0245	0.0442	1.0139	2.16224	0.2368	0.0042	4.8199	0.0491	0.0851
F: consumption-goo	0.0236	0.0304	2.1065	1.22026	0.0568	0.0198	0.8791	0.0646	0.3066
Note: When the effect	ctive labour	is used, t	he coeffic	ient, x_0 ar	$d x_e$, are	connected v	vith <i>ke</i> (0) (see also b	elow).

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

	1 (0)	11.7.(0)			(0) ((0) ((0)	(0) ((0)	F	
$\mathbf{p}=\mathbf{P}_{M}/\mathbf{P}_{F}=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(re:	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_{\rm x}({\rm w/r})$
Case 1. Total	6.5642	(Δ(w/r)/(w/r)		4.3652	75.49	0.0132	0.0870	6.5642
H: capital-goods	38.6130	0.0000	0.0000	#DIV/0!	8.7532	239.11	0.0042	0.1615	38.6130
F: consumption-goo	4.1519	0.0000	0.0000	#DIV/0!	4.0349	55.52	0.0180	0.0748	4.1519
							=α/	$(1-\alpha)=\alpha_x$	=k(0)
Case 2. Total	7.3751				4.3652	78.66	0.0127	0.0938	7.3751
H: capital-goods	50.1969	0.3000	(0.0000)	#######	8.7532	239.11	0.0042	0.2099	50.1969
F: consumption-goo	4.1519	0.0000	0.0000	#DIV/0!	4.0349	55.52	0.0180	0.0748	4.1519
Case 3. Total	6.0057				4.3371	75.00	0.0133	0.0801	6.0057
H: capital-goods	38.6130	0.0000	(0.3180)	0.0000	8.7532	163.06	0.0061	0.2368	38.6130
F: consumption-goo	3.7745	-0.0909	0.1968	0.4619	4.0349	66.44	0.0151	0.0568	3.7745

Note: When the effective labour is used, the current wage rate and the profit rate are connected with k(0).

Rybczenski [1955] only holds under the condition of H-O.

9. Introduction of relative price level, p=P_H/P_F: Duality [Jones, R. W., 1965] S-Samuelson [1941] $\mathbf{r}_{\mathbf{r}} = \mathbf{r}_{\mathbf{r}}(0) = \partial \mathbf{Y}_{\mathbf{r}} / \partial \mathbf{X}_{\mathbf{r}} \qquad \mathbf{r}_{\mathbf{u}}(0) = \partial \mathbf{Y}_{\mathbf{r}} / \partial \mathbf{X}_{\mathbf{u}} = \mathbf{p} \cdot (\partial \mathbf{Y}_{\mathbf{u}} / \partial \mathbf{X}_{\mathbf{u}}) \text{ where } \mathbf{p} = \mathbf{p}_{\mathbf{u}} / \mathbf{p}_{\mathbf{r}} \text{ w}_{\mathbf{r}} = \mathbf{w}_{\mathbf{u}}(0) = \partial \mathbf{Y}_{\mathbf{r}} / \partial \mathbf{I}_{\mathbf{r}} \qquad \mathbf{w}_{\mathbf{u}} / \partial \mathbf{w}_{\mathbf{u}} = \mathbf{p} \cdot (\partial \mathbf{Y}_{\mathbf{u}} / \partial \mathbf{I}_{\mathbf{u}})$

$\mathbf{I}_{\mathrm{F}} - \mathbf{I}_{\mathrm{F}}(0) - \mathbf{i}_{\mathrm{F}} - \mathbf{i}_{\mathrm{F}}(0)_{\mathrm{nominal}} - \mathbf{p} \cdot (0 + \mathbf{i}_{\mathrm{H}}), \text{ where } \mathbf{p} - \mathbf{r}_{\mathrm{H}}/\mathbf{r}_{\mathrm{F}} + \mathbf{w}_{\mathrm{F}} - \mathbf{w}_{\mathrm{F}}(0) - \mathbf{i}_{\mathrm{F}}/\mathbf{c}_{\mathrm{F}} + \mathbf{w}_{\mathrm{H}}(0)_{\mathrm{nominal}} - \mathbf{p} \cdot (0 + \mathbf{i}_{\mathrm{H}}),$								
	Marginal productivity	r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_H	$P_F = p = P_H / P_F$	Changes (%)
Case 1.	Total	0.05782		4.3652				for r & w
	H: capital-goods	0.03661		8.7532		1	1.00000	1.0000
	F: consumption-goo	ods	0.07268		4.0349		1	1.4664
Case 2.	Total	0.05549		4.3652				1.0000
	H: capital-goods	0.03661		8.7532		1	1.00000	0.8356
	F: consumption-good	ods	0.07268		4.0349		1	1.0000
Case 3.	Total	0.05782		4.3371				1.0000
	H: capital-goods	0.05368		8.7532		1	1.00000	1.0000
	F: consumption-goo	ods	0.06073		4.0349		1	1.0000

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	T2 Case 1. Both regions have different rates of profit and the wage rates Country=capital-goods+consumption-goods: T=H+F 6144									
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	8500	295	197	492	5652	6144	2464	2169	4.0817
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	S _{SH/Y}	w(0)
0.08000	1.38346	0.05782	6.5642	4.7448	0.40105	0.6000	0.37085	0.04800	0.35305	4.3652
H: capita	l-goods		s=S/Y	0.40105	0.26068	0.14037		0.44115		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_H(0) \neq \Delta K($	S(0)	$S_{H}(0)$	A(0)
0.00755	90.64	3500.00	89.69	38	128.13	793.42	921.55	1087.01	997.32	6.1175
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	$s_{SH/Y}$	w _{H(0)}
0.13903	3.79797	0.03661	38.6130	10.1668	1.17955	0.7000	1.19891	0.09732	1.08223	8.7532
F: consu	nption-go	ods	c=1-s	0.59895						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1204.26	5000.00	205.22	158.17	363.38	4859.07	5222.45	1377.02	1171.80	3.9277
α	$\Omega(0)$	$\mathbf{r}_{\mathrm{F}(0)}$	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	$s_{\rm SH/Y}$	$W_{F(0)}$
0.06958	0.95740	0.07268	4.1519	4.3367	0.26367	0.5647	0.23356	0.03930	0.22438	4.0349
Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.17646$ Uzawa [1962]: $\Omega_{H} > \Omega_{F}$										

1. Basic variables and parameters under convergence

$g_{\gamma} *= g_{\kappa}^{*}$	$g_A *$	g_y^*	$arOmega^*$	r^{*}	i	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
0.1469	0.1272	0.1383	1.3835	0.0578	0.33044	0.6150	0.00755	0.08000
0.2084	0.1716	0.1993	3.7980	0.0366	0.96311	0.8218	0.00755	0.13903
0.1200	0.1039	0.1116	0.9574	0.0727	0.21880	0.5252	0.00755	0.06958
0.1332	0.1137	0.1247	1.6133	0.0546	0.32859	0.6539	0.00755	0.08809
0.2692	0.2236	0.2597	3.7980	0.0366	1.24620	0.8206	0.00755	0.13903
0.0817	0.0677	0.0736	1.2318	0.0643	0.16834	0.5976	0.00755	0.07919
0.1461	0.1267	0.1375	1.3658	0.0578	0.32622	0.6117	0.00755	0.07898
0.1815	0.1420	0.1726	3.2999	0.0537	0.74083	0.8083	0.00755	0.17714
0.1304	0.1148	0.1219	0.9685	0.0607	0.24105	0.5239	0.00755	0.05881
	0.1469 0.2084 0.1200 0.1332 0.2692 0.0817 0.1461 0.1815	By FK SA 0.1469 0.1272 0.2084 0.1716 0.1200 0.1039 0.1332 0.1137 0.2692 0.2236 0.0817 0.0677 0.1461 0.1267 0.1815 0.1420	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	0.1469 0.1272 0.1383 1.3835 0.0578 0.2084 0.1716 0.1993 3.7980 0.0366 0.1200 0.1039 0.1116 0.9574 0.0727 0.1332 0.1137 0.1247 1.6133 0.0546 0.2692 0.2236 0.2597 3.7980 0.0366 0.0817 0.0677 0.0736 1.2318 0.0643 0.1461 0.1267 0.1375 1.3658 0.0578 0.1461 0.1267 0.1375 1.3658 0.0578	0.1469 0.1272 0.1383 1.3835 0.0578 0.33044 0.2084 0.1716 0.1993 3.7980 0.0366 0.96311 0.1200 0.1039 0.1116 0.9574 0.0727 0.21880 0.1322 0.1137 0.1247 1.6133 0.0546 0.32859 0.2692 0.2236 0.2597 3.7980 0.0366 1.24620 0.0817 0.0677 0.0736 1.2318 0.0643 0.16834 0.1461 0.1267 0.1375 1.3658 0.0578 0.32622 0.1815 0.1420 0.1726 3.2999 0.0537 0.74083	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$

2. Basic variables and parameters under the current situation (delta>alpha)

21 Duble (unubleb und parameters under the carrent bitantion (actival applia)											
	$g_{Y(a)}$	$g_{K(a)}$	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y (0)		
Case 1. Total	0.0800	0.3000	0.0491	0.0718	0.0890	0.84900	-0.2340	6.5642	4.7448		
H: capital-goods	0.0400	0.4000	0.0255	0.0322	0.0704	0.97943	-0.1576	38.6130	10.1668		
F: consumption-goo	0.0108	0.1039	-0.0034 [0.0032	0.0956	1.01633	-0.4911	4.1519	4.3367		
For min capital goo	od growth	0.0578									
Case 2. Total	0.0800	0.3000	0.0467	0.0718	0.0862	0.85844	-0.2045	7.7226	4.7869		
H: capital-goods	0.0400	0.4000	-0.0221	0.0322	0.0863	1.01464	-0.1941	38.6130	10.1668		
F: consumption-goo	0.0115	0.1063	-0.0039	0.0039	0.0980	1.02391	-0.4263	5.3975	4.3819		
Case 3. Total	0.0800	0.3000	0.0494	0.0718	0.0893	0.84575	-0.2340	6.5186	4.7726		
H: capital-goods	0.0400	0.4000	-0.0371	0.0322	0.0094	1.02754	-0.2193	35.1027	10.6375		
F: consumption-goo	0.0078	0.1027	-0.0054	0.0002	0.0944	1.02350	-0.4996	4.1519	4.2870		
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1-\alpha)n \qquad delta = (n+\alpha(i-i\beta*-n))/(i(1-\beta*)) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))$											

$g_{A(a)} - g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha) n$	ucita=(II) u(I-Ip	-n))/(n(1-b	<i>I</i>) $Pactual(\delta > \alpha) = 1$	$((1))(g_{A(a)}(0))(0)$	u))
					Heckscher-Ohlin

3. Relat	ionships between	quantities	: K _H & I	K _F and L	$L_H \& L_F$	K=a _{KH} ·Y _H +a _{KF} ·Y _F			
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$	1		\mathbf{y}_{H}	$a_{LH}{=}1/y_{H}$	$L=(a_{LII}y_{II})L_{I}$	$(a_{LF}, y_F)L_F$	$L=a_{LH}Y_{H}+a$	LF.YF
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	$y_{\rm F}$	$\boldsymbol{a_{LF}}{=}1/\boldsymbol{y_{F}}$	$L_H \& L_F$	$Y_{\rm H}\&Y_{\rm F}$	$K = K_H + K_F$	L=L _H +L _F
Case 1.	Total	1.3835		4.7448	0.21076	1295	6144	8500	1295
	H: capital-goods	3.7980		10.1668	0.09836	90.64	921.55	3500	91
	F: consumption-goo	0.9574	4.3367	0.23059	1204.26	5222.45	5000	1204	
Case 2.	Total	1.6133		4.7869	0.20891	1295	6199	10000	1295
	H: capital-goods	3.7980		10.1668	0.09836	90.64	921.55	3500	91
	F: consumption-goo	ods	1.2318	4.3819	0.22821	1204.26	5276.96	6500	1204
Case 3.	Total	1.3658		4.7726	0.20953	1304	6223	8500	1304
	H: capital-goods	3.2999		10.6375	0.09401	99.71	1060.64	3500	100
	F: consumption-goo	ods	0.9685	4.2870	0.23326	1204.26	5162.70	5000	1204

T2 Case 2	T2 Case 2. K increases in consumption-goods by 30%										
Country=	capital-g	oods+con	sumption	-goods: T	=H+F	6199	$\Delta Y(0)/Y(0)$	0.00887	A(0) = k(0)	$)^{1-\alpha}/\Omega(0)$	
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)	
0.00755	1295	10000	328	218	546	5652	6199	2464	2136	3.9981	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	S _{SH/Y}	w(0)	
0.08809	1.61329	0.05460	7.7226	4.78686	0.39752	0.6000	0.36390	0.05285	0.34467	4.3652	
H: capita	l-goods						$\Delta Y_{H(0)}/Y_{H(0)}$	0.00000			
n	_L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)	
0.00755	90.64	3500.00	89.69	38	128.13	793.42	921.55	1413.11	1323.42	6.1175	
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}	
0.13903	3.79797	0.03661	38.6130	#######	1.53342	0.7000	1.59093	0.09732	1.43609	8.7532	
F: consur	nption-go	oods	$\Delta K/K$:	0.3	0.15		$\Delta Y_{F(0)}/Y_{F(0)}$	0.01044			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)	
0.00755	1204.26	6500.00	237.92	179.97	417.89	4859.07	5276.96	1050.92	813.00	3.8343	
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	s _{SH/Y}	w _{F(0)}	
0.07919	1.23177	0.06429	5.3975	4.38192	0.19915	0.5693	0.16134	0.04509	0.15407	4.0349	
							$Y_{H(0)}\!/Y_{F(0)}$	0.17464			

4. The Penrose curve, B_K , and the assets valuation ratio, v

	Ω^*	I/K	g_K^*	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = 1/\beta^*$
Case 1. Total	1.3835	0.2388	0.1469	1.6261	0.0578	0.0356	1.6261	1.0000	1.6261
H: capital-goods	3.7980	0.2536	0.2084	1.2168	0.0366	0.0301	1.2168	1.0000	1.2168
F: consumption-goo	0.9574	0.2285	0.1200	1.9039	0.0727	0.0382	1.9039	1.0000	1.9039
Case 2. Total	1.6133	0.2037	0.1481	1.3751	0.0637	0.0463	1.3751	1.0000	1.5292
H: capital-goods	3.7980	0.3281	0.2084	1.5745	0.0366	0.0233	1.5745	1.0000	1.2187
F: consumption-goo	1.2318	0.1367	0.1212	1.1275	0.0643	0.0570	1.1275	1.0000	1.6734
Case 3. Total	1.3658	0.2388	0.1467	1.6278	0.0571	0.0351	1.6278	1.0000	1.6347
H: capital-goods	3.2999	0.2245	0.2177	1.0313	0.0537	0.0521	1.0313	1.0000	1.2372
F: consumption-goo	0.9685	0.2489	0.1187	2.0960	0.0607	0.0290	2.0960	1.0000	1.9087

. . . .

5. The relative pri	5. The relative price level: real vs. nominal (a) Inf. or def (b) (c)											
	r(0)	r=∂Yt/∂Kt	Py=r(0)/r real	r _{M(0)} given	py=rM(0)/r rea	m_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)			
Case 1. Total	0.05782	0.05782	1.0000	0.0330	0.5707	0.0356	0.9280	0.0228	1.4462			
H: capital-goods	0.03661	0.03661	1.0000	0.0330	0.9014	0.0301	1.0969	0.0173	1.9064			
F: consumption-goo	0.07268	0.07268	1.0000	0.0330	0.4541	0.0382	0.8645	0.0261	1.2647			
Case 2. Total	0.05460	0.05460	1.0000	0.0330	0.6044	0.0416	0.7926	0.0228	1.4462			
H: capital-goods	0.03661	0.03661	1.0000	0.0330	0.9014	0.0300	1.0986	0.0245	1.3477			
F: consumption-goo	0.06429	0.06429	1.0000	0.0330	0.5133	0.0384	0.8589	0.0214	1.5394			
Case 3. Total	0.05782	0.05782	1.0000	0.0330	0.5707	0.0349	0.9450	0.0287	1.1511			
H: capital-goods	0.05368	0.05368	1.0000	0.0330	0.6148	0.0434	0.7606	0.0245	1.3477			
F: consumption-goo	0.06073	0.06073	1.0000	0.0330	0.5434	0.0318	1.0372	0.0236	1.3969			

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial t/\partial kt^{\alpha}$ -tt t^{- α} and w(real)= $\partial t/\partial kt^{\alpha}$ tr^{- α}

6. Relat	b. Relationships between price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for P_F Rybczynski											
For H,	$P_{H}=a_{KH}\cdot r_{H}+a_{LH}\cdot w_{H}$ When real	=nominal, th	e price leve	1 is 1.0.	The e	The elasticity of substitution is 1						
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$ r_H	r_F	w_H	W_F	P_{H}	P_F	$p = P_H / P_F$					
Case 1.	Total											
	H: capital-goods 0.03661		8.7532		1		1					
	F: consumption-goods	0.07268		4.0349]	1					
Case 2.	Total											
	H: capital-goods 0.03661		8.7532		1		1					
	F: consumption-goods	0.06429		4.0349		1	1					
Case 3.	Total											
	H: capital-goods 0.05368		8.7532		1		1					
	F: consumption-goods	0.06073		4.0349		1	l					

	 L incre =capital-g 				-H+F	6223	ΔY(0)/Y(0)	0.01291	Uzav A(0)=k(0	a 1962
ountry-	-capital-g	K(0)	$S_{\Pi}(0)$	-goods: 1 D(0)	–п∓г П(0)	W(0)	$\frac{\Delta Y(0)/Y(0)}{Y(0)}$	S(0)	A(0) = k(0) = K(0)	A(0) = A(0)
0.00755	1304	8500	295	197	492	5732	6223	2464		4.1158
α	$\Omega(0)$	r(0)	k(0)	y(0)	5 S	s _Π	S _H	S _{SII/Y}	S _{SH/Y}	w(0)
0.07898	1.36583	0.05782	6.5186	4.77263	0.39593	0.6000	0.36588	0.04739	0.34855	4.3957
H: capita		0.00702	ΔL/L:	0.1	0.07070	0.0000			0.01000	1.5707
n n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$\frac{Y_{H(0)} + Y_{H(0)}}{Y_{H}(0)}$	S(0)	S _H (0)	A(0)
0.00755	99.71	3500.00	131.52	56	187.88	872.76	1060.64	949.31	817.79	5.663
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	S _H	S _{SII/Y}	S _{SH/Y}	W _{H(0)}
0.17714	3.29989	0.05368	35.1027	#########	0.89503	0.7000	0.88017	0.12400	0.77104	8.7532
	mption-go							-0.01144		
n	L(0)	K(0)	$S_{\Pi}(0)$	D (0)	Π(0)	W(0)	$Y_{\rm F}(0)$	S(0)	S _H (0)	A(0)
0.00755	1204.26	5000.00	163.39	140.24	303.63	4859.07	5162.70		1351.33	3.942
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	s _{SH/Y}	$W_{F(0)}$
0.05881	0.96849	0.06073	4.1519	4.28704	0.29340	0.5381	0.27030	0.03165	0.26175	4.0349
Using goa	al seek, wh		roaches w				Y _{H(0)} /Y _{F(0)}	0.20544		
7. The n	eutrality	of financ	ial assets	and the o	coeffcient	t <i>x=r/w</i>	ke∗=Ω*	*^(1/(1-α))	x.*/>	k₀=k(0)/k₀
		r _{CB} goal see		r*/r _{M*}	c _{CB} =r _M */r _{CB}	α	$x_0 = \alpha_x / k (0$		$x_c^* = \alpha_x / ke^*$	x ₀ /x _c *
Case 1.	Total	0.0228	0.0356	1.6261	1.55842	0.0870	0.0132	1.4231	0.0611	0.216
H: capital		0.0173	0.0301	1.2168	1.73793	0.1615	0.0042	4.7113	0.0343	0.1220
	nption-goo		0.0382	1.9039	1.46297	0.0748	0.0180	0.9543	0.0784	0.2298
		goal seek			goal seek	$\alpha_x = \alpha/(1-\alpha)$)			
Case 2.	Total	0.0228	0.0416	1.3751	2.02926	0.0966	0.0125	1.6896	0.0572	0.218
H: capital	-goods	0.0245	0.0300	1.5745	0.94951	0.1615	0.0042	4.7113	0.0343	0.1220
F: consun	nption-goo	0.0214	0.0384	1.1275	2.65982	0.0860	0.0139	1.2541	0.0686	0.2020
Case 3.	Total	0.0287	0.0349	1.6278	1.22334	0.0858	0.0133	1.4028	0.0611	0.2182
H: capital		0.0245	0.0434	1.0313	2.12589	0.2153	0.0046	4.2669	0.0505	0.0912
	nption-goo		0.0318	2.0960	1.22640		0.0180	0.9665	0.0646	0.2786
	en the effe									
	for the He			bczynski	· · ·					
$P_M/P_F =$		k(0)	$\Delta k/k(0)$		sigma		w(0)/r(0)	<u> </u>	k/(w/r)	$\alpha_{\rm x}({\rm w/r})$
Case 1.	Total	6.5642		(w/r)/(w/r)		4.3652	75.49	0.0132	0.0870	6.564
H: capital		38.6130	0.0000	0.0000	#DIV/0!	8.7532	239.11	0.0042	0.1615	38.613
: consun	nption-goo	4.1519	0.0000	0.0000	#DIV/0!	4.0349	55.52	0.0180	0.0748	4.151
									$\alpha/(1-\alpha)=\alpha_x$	=k(0)
Case 2.	Total	7.7226				4.3652	79.95	0.0125	0.0966	7.722
H: capital		38.6130	0.0000	0.0000	#DIV/0!	8.7532	239.11	0.0042	0.1615	38.613
f: consun	nption-goo	5.3975	0.3000	0.1304	-2.3000	4.0349	62.76	0.0159	0.0860	5.397:
	-								0.0050	6 840
	Total	6.5186		(0.3180)	-0.2858	4.3957	76.02	0.0132	0.0858	6.518
									0.2153	35.102 4.1519
H: capital		35.1027	-0.0909			8.7532	163.06	0.0061	0.0725	
H: capital F: consun	nption-goo	4.1519	0.0000	0.1968	0.0000	4.0349	66.44	0.0151	0.0625	
H: capital F: consun Note: Wh	nption-goo en the effe	4.1519 ctive labou	0.0000 ar is used,	0.1968 the current	0.0000 wage rate	4.0349	66.44	0.0151		
H: capital F: consun Note: Wh Rybczens	nption-goo en the effe ski [1955]	4.1519 ctive labou only holds	0.0000 ar is used, under th	0.1968 the current e condition	0.0000 wage rate n of H-O.	4.0349 and the pr	66.44 ofit rate ar	0.0151 e connecte	d with k()).
H: capital F: consun Note: Wh Rybczens 9. Introd	nption-goo en the effe ski [1955] luction o f	4.1519 ctive labou only holds relative	0.0000 ar is used, under th price lev	0.1968 the current e condition el, $p = P_H$	0.0000 wage rate of H-O. /P _F : Du	4.0349 and the pr ality [Jon	66.44 ofit rate ar nes, R. W.	0.0151 e connecte ., 1965]	d with <i>k</i> (0 S-Samuel)). son [194
H: capital F: consun Note: Wh Rybczens 9. Introd	nption-goo en the effe ski [1955] luction o f	4.1519 ctive labou only holds relative	0.0000 ar is used, under th price lev	0.1968 the current e condition el, $p = P_H$	0.0000 wage rate of H-O. /P _F : Du	4.0349 and the pr ality [Jon	66.44 ofit rate ar nes, R. W.	0.0151 e connecte ., 1965]	d with k()). son [194]
H: capital F: consum Note: Wh Rybczens 9. Introc F=r _F (0)=6	nption-goo en the effe ski [1955] luction o f	4.1519 ctive labou only holds f relative r _H (0) _{nomina}	0.0000 ar is used, a under th price lev 1=p·(@Y _H /@	0.1968 the current e condition el, $p = P_H$ K _H), where	0.0000 wage rate of H-O. / P_F : Due $p=P_H/P_F$	4.0349 and the pr ality [Jon w _F =w _F (0)	66.44 ofit rate ar nes, R. W . =əY _F /əL _F	0.0151 e connecte ., 1965]	d with <i>k</i> (0 S-Samuel)). son [194 L _H)
H: capital F: consun Note: Wh Rybczens 9. Introc F=r _F (0)=c	nption-goo en the effe ski [1955] luction of əY _F /əK _F	4.1519 ctive labou only holds f relative r _H (0) _{nomina}	0.0000 ar is used, a under th price lev 1=p·(@Y _H /@	0.1968 the current e condition el, $p = P_H$ K _H), where	0.0000 wage rate of H-O. / P_F : Due $p=P_H/P_F$	4.0349 and the pr ality [Jon w _F =w _F (0)	66.44 ofit rate ar nes, R. W . =əY _F /əL _F	0.0151 e connecte ., 1965] ^{WH(0)nomina}	ed with <i>k</i> (0 S-Samuel ₁=p·(∂Y _H /∂)). son [194 L _H) Changes (%
H: capital F: consun Note: Wh Rybczens 9. Introc F=r _F (0)=c	nption-goo en the effe ski 1955 luction o f əY _F /əK _F Marginal p	4.1519 ctive labou only holds f relative r _H (0) _{nomina} roductivity	0.0000 ar is used, a under th price lev I=p·(əY _H /a r _{H(marg.pro.)}	0.1968 the current e condition el, $p = P_H$ K _H), where	0.0000 wage rate of H-O. / P_F : Due $p=P_H/P_F$ w _{H(margi.Pro.}	4.0349 and the pr ality [Jon $w_F = w_F(0)$ $w_{F(matgi.pro.)}$	66.44 ofit rate ar nes, R. W . =əY _F /əL _F	0.0151 e connecte ., 1965] ^{WH(0)nomina}	ed with <i>k</i> (0 S-Samuel ₁=p·(∂Y _H /∂)). son [194 L _H) Changes (% for r & S
H: capital F: consun Note: Wh Rybczens 9. Introc $F_F = r_F(0) = 0$ Case 1.	nption-goo en the effe ski 1955 luction of ∋Y _F /∂K _F Marginal pr Total H: capital F: consum	4.1519 ctive labou only holds f relative r _H (0) _{nomina} roductivity	0.0000 ar is used, a under th price lev $I = p \cdot (\Im Y_H / \Im$ $r_{H(marg.pro.)}$ 0.05782 0.03661 ds	0.1968 the current e condition el, $p = P_H$ K _H), where	0.0000 wage rate of H-O. / P_F : Du e p=P _H /P _F $w_{H(margl.Pro.}$ 4.3652 8.7532	4.0349 and the pr ality [Jon w _F =w _F (0)	66.44 ofit rate ar es, R. W = $\partial Y_F / \partial L_F$ P_H	0.0151 e connecte ., 1965] ^{WH(0)nomina}	ed with k (0 S-Samuel $a = \mathbf{p} \cdot (\mathbf{\partial} \mathbf{Y}_{H} / \mathbf{\partial} \mathbf{y}_{H})$ $p = P_{H} / P_{F}$)). son [194 L _H) Changes (% for r & v 1.0000 1.4664
H: capital F: consun Note: Wh Rybczens 9. Introc $F_F = r_F(0) = 0$ Case 1.	nption-goo en the effe ski 1955 ↓ luction of ∋Y _F /∂K _F Marginal pr Total H: capital <u>F: consum</u> Total	4.1519 ctive labor only holds relative $r_{\rm H}(0)_{\rm nomina}$ roductivity -goods aption-goo	0.0000 ar is used, a under the price lev $r_{H(marg.pro.)}$ 0.05782 0.03661 ds 0.05460	0.1968 the current e condition el, $p = P_H$ K _H), where $r_{F(margl.Pro.)}$	0.0000 wage rate of H-O. / P_F : Du e p=P _H /P _F $w_{H(margl.Pro.}$ 4.3652 8.7532 4.3652	4.0349 and the pr ality [Jon $w_F = w_F(0)$ $w_{F(matgi.pro.)}$	$\begin{array}{c} 66.44 \\ \text{ofit rate ar} \\ \text{es, R. W} \\ = \partial Y_{\text{F}} / \partial L_{\text{F}} \\ P_{H} \\ 1 \end{array}$	0.0151 e connecte ., 1965] w _{H(0)nomina} P _F	ed with k ((S-Samuel $_{J}=p \cdot (\Im Y_{H}/\Im p = P_{H}/P_{F})$ 1.00000)). son 194 L _H) for r & ' 1.0000 <u>1.4664</u> 0.8840
H: capital F: consun Note: Wh Rybczens 9. Introc $F_F = r_F(0) = 0$ Case 1.	nption-goo en the effe ski [1955] duction of $\Rightarrow Y_F / \Rightarrow K_F$ Marginal pr Total H: capital <u>F: consun</u> Total H: capital	4.1519 ctive labou only holds relative r _H (0) _{nomina} roductivity -goods aption-goo	0.0000 ar is used, a under the price lev r H(marg.pro.) 0.05782 0.03661 ds 0.05460 0.03661	0.1968 the current e condition el, $p = P_H$ K _H), where $r_{F(margl.Pro.)}$ 0.07268	0.0000 wage rate of H-O. / P_F : Du e p=P _H /P _F $w_{H(margl.Pro.}$ 4.3652 8.7532	4.0349 and the pr ality [Jon w _F =w _F (0) <i>w_{F(matgi.pro.)}</i> 4.0349	66.44 ofit rate ar es, R. W = $\partial Y_F / \partial L_F$ P_H	0.0151 e connecte ., 1965] W _{H(0)nomina} <i>P_F</i> 1	ed with k (0 S-Samuel $a = \mathbf{p} \cdot (\mathbf{\partial} \mathbf{Y}_{H} / \mathbf{\partial} \mathbf{y}_{H})$ $p = P_{H} / P_{F}$)). son [194 L _H) for r & 1.0000 <u>1.4664</u> 0.8846 0.8356
Note: Wh Rybczens 9. Introc $r_F = r_F(0) = 0$ Case 1. Case 2.	nption-goo en the effe ski [1955] duction of $\partial Y_F / \partial K_F$ Marginal pr Total H: capital <u>F: consun</u> Total H: capital F: consun	4.1519 ctive labor only holds relative $r_{\rm H}(0)_{\rm nomina}$ roductivity -goods aption-goo	0.0000 ar is used, a under th price lev $_{I}=p \cdot (\Im Y_{H}/\Im $	0.1968 the current e condition el, $p = P_H$ K _H), where $r_{F(margl.Pro.)}$	0.0000 wage rate of H-O. / P_F : Du. e p=P _H /P _F 4.3652 8.7532 4.3652 8.7532	4.0349 and the pr ality [Jon $w_F = w_F(0)$ $w_{F(matgi.pro.)}$	$\begin{array}{c} 66.44 \\ \text{ofit rate ar} \\ \text{es, R. W} \\ = \partial Y_{\text{F}} / \partial L_{\text{F}} \\ P_{H} \\ 1 \end{array}$	0.0151 e connecte ., 1965] w _{H(0)nomina} P _F	ed with k ((S-Samuel $_{J}=p \cdot (\Im Y_{H}/\Im p = P_{H}/P_{F})$ 1.00000)). son [194 L _H) Changes (% for r & v 1.0000 <u>1.4664</u> 0.8846 0.8356 1.0000
H: capital F: consun Note: Wh Rybczens 9. Introc $F_F = r_F(0) = 0$ Case 1.	nption-goo en the effe ski [1955] luction of oY _F /oK _F Marginal pr Total H: capital <u>F: consun</u> Total H: capital <u>F: consun</u> Total	4.1519 ctive labou only holds i relative r _H (0) _{nomina} roductivity -goods <u>aption-goo</u>	0.0000 ar is used, a under th price lev $_{I}=p \cdot (_{9}Y_{H}/_{5})^{r}$ 0.05782 0.03661 ds 0.03661 ds 0.05782 0.03661 ds 0.05782	0.1968 the current e condition el, $p = P_H$ K _H), where $r_{F(margl.Pro.)}$ 0.07268	0.0000 wage rate of H-O. / P_F : Du e p=P _H /P _F : Du 4.3652 8.7532 4.3652 8.7532 4.3655 4.3957	4.0349 and the pr ality [Jon w _F =w _F (0) <i>w_{F(matgi.pro.)}</i> 4.0349	66.44 ofit rate ar $es, R. W_{H}$ $= \partial Y_{F} / \partial L_{F}$ P_{H} 1 1 1	0.0151 e connecte ., 1965] W _{H(0)nomina} <i>P_F</i> 1	ed with k ((S-Samuel $a = \mathbf{p} \cdot (\Im \mathbf{Y}_{H}/\Im$ $p = P_{H}/P_{F}$ 1.00000 1.00000)). son 194 L _H) Changes (? for r & ' 1.0000 <u>1.4664</u> 0.8840 0.8356 1.0000 1.0000
H: capital F: consum Note: Wh Rybczens 9. Introc $F_F=r_F(0)=0$ M Case 1.	nption-goo en the effe ski [1955] - luction of $\partial Y_F / \partial K_F$ Marginal pr Total H: capital <u>F: consum</u> Total H: capital H: capital H: capital H: capital	4.1519 ctive labou only holds i relative r _H (0) _{nomina} roductivity -goods <u>aption-goo</u>	0.0000 ar is used, a under the price lev $_{I}=p\cdot(\Im Y_{H}/\epsilon)$ 0.05782 0.03661 ds 0.03661 ds 0.05782 0.05782 0.05368	0.1968 the current e condition el, $p = P_H$ K _H), where $r_{F(margl.Pro.)}$ 0.07268	0.0000 wage rate of H-O. / P_F : Du. e p=P _H /P _F 4.3652 8.7532 4.3652 8.7532	4.0349 and the pr ality [Jon w _F =w _F (0) <i>w_{F(matgi.pro.)}</i> 4.0349	$\begin{array}{c} 66.44 \\ \text{ofit rate ar} \\ \text{es, R. W} \\ = \partial Y_{\text{F}} / \partial L_{\text{F}} \\ P_{H} \\ 1 \end{array}$	0.0151 e connecte ., 1965] W _{H(0)nomina} <i>P_F</i> 1	ed with k ((S-Samuel $_{J}=p \cdot (\Im Y_{H}/\Im p = P_{H}/P_{F})$ 1.00000)). son 194 L _H) Changes (? for r & 1.0000 1.466- 0.884- 0.835- 1.0000

	T3 Case 1. Both regions have different rates of profit and the wage rates Country=capital-goods+consumption-goods: T=H+F 6144										
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	A(0)=k(0 S _H (0)	A(0)	
0.00755	1295	8500	295	197	492	5652	6144	2464	2169	4.0817	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_{H}	$\mathbf{s}_{\mathrm{SII/Y}}$	s _{SH/Y}	w(0)	
0.08000	1.38346	0.05782	6.5642	4.7448	0.40105	0.6000	0.37085	0.04800	0.35305	4.3652	
H: capita	l-goods		s=S/Y	0.40105	0.26068	0.14037		0.44115			
n	L(0)	K(0)	S ₁₁ (0)	D(0)	П(0)	W(0)	$Y_{H}(0) \neq \Delta K($	S(0)	$S_{H}(0)$	A(0)	
0.00755	90.64	3500.00	89.69	38	128.13	793.42	921.55	1087.01	997.32	6.1175	
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	\mathbf{s}_{H}	$\mathbf{s}_{\mathrm{SII/Y}}$	s _{SH/Y}	W _{H(0)}	
0.13903	3.79797	0.03661	38.6130	10.1668	1.17955	0.7000	1.19891	0.09732	1.08223	8.7532	
F: consur	nption-go	oods	c=1-s	0.59895							
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	· Π(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)	
0.00755	1204.26	5000.00	205.22	158.17	363.38	4859.07	5222.45	1377.02	1171.80	3.9277	
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	s _H	S _{SII/Y}	s _{SH/Y}	W _{F(0)}	
0.06958	0.95740	0.07268	4.1519	4.3367	0.26367	0.5647	0.23356	0.03930	0.22438	4.0349	
Cases corr	Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.17646 \text{ Jzawa [1962]}:\Omega_{H} > \Omega_{F}$										

1. Basic variables and parameters under convergence

	$g_Y *= g_K^*$	g_A^*	g_y^*	$arOmega^*$	r^*	i	$\beta^*_{(\delta=\alpha)}$	n	α
Case 1. Total	0.1469	0.1272	0.1383	1.3835	0.0578	0.33044	0.6150	0.00755	0.08000
H: capital-goods	0.2084	0.1716	0.1993	3.7980	0.0366	0.96311	0.8218	0.00755	0.13903
F: consumption-goo	0.1200	0.1039	0.1116	0.9574	0.0727	0.21880	0.5252	0.00755	0.06958
Case 2. Total	0.1790	0.1546	0.1701	1.3664	0.0668	0.39918	0.6127	0.00755	0.09132
H: capital-goods	0.3007	0.2633	0.2910	2.1392	0.0445	0.90660	0.7096	0.00755	0.09509
F: consumption-goo	0.1391	0.1188	0.1306	1.1921	0.0759	0.28467	0.5827	0.00755	0.09046
Case 3. Total	0.1736	0.1504	0.1648	1.2377	0.0708	0.36524	0.5883	0.00755	0.08767
H: capital-goods	0.2572	0.2283	0.2478	2.0231	0.0389	0.74864	0.6951	0.00755	0.07869
F: consumption-goo	0.1467	0.1257	0.1381	1.0680	0.0839	0.28240	0.5548	0.00755	0.08961

2. Basic variables and parameters under the current situation (delta>alpha)

	and para			ear rente o		(priver,		
	g Y(a)	g K(a)	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)
Case 1. Total	0.0800	0.3000	0.0491	0.0718	0.0890	0.84900	-0.2340	6.5642	4.7448
H: capital-goods	0.0400	0.4000	0.0255	0.0322	0.0704	0.97943	-0.1576	38.6130	10.1668
F: consumption-goo	0.0108	0.1039	-0.0034	0.0032	0.0956	1.01633	-0.4911	4.1519	4.3367
For min capital goo	od growth	0.0578	-						
Case 2. Total	0.0800	0.3000	0.0457	0.0718	0.0862	0.88649	-0.2738	6.5642	4.8039
H: capital-goods	0.0400	0.4000	-0.0049	0.0322	0.0894	1.00529	-0.2957	11.6076	5.4261
F: consumption-goo	0.0443	0.0933	0.0290	0.0365	0.0851	0.89916	-0.3165	5.5820	4.6827
Case 3. Total	0.0800	0.3000	0.0468	0.0718	0.0867	0.87206	-0.2838	7.4446	6.0150
H: capital-goods	0.0400	0.4000	0.0016	0.0322	0.0846	0.99787	-0.3028	13.2658	6.5572
F: consumption-goo	0.0453	0.0940	0.0300	0.0375	0.0858	0.89453	-0.3398	6.3109	5.9094
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)}) - (1 - \alpha g_{K(a)$	α)n (delta=(n+	α(i-iβ*-n))	/(i(1-β*)) β	$B_{actual(\delta > \alpha)}$	$=1-((1/i)(g_A))$	_(a) k(0)^(δ	-α))	
								Hecksche	r-Ohlin
3. Relationships between quantities: $K_H \& K_F$ and $L_H \& L_F K = (a_{KH}Y_H)L_H + (a_{KF}Y_F)L_F K = a_{KH}Y_H + a_{KF}Y_F$									

5. Itelat	ionsmps between	quantities		i ji unu i	$H \leftarrow D_F$	(-Kn// n/-	n (~Kr97)=r	A WKH A H	KP ⁺ * P
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			Ун	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} .y _H)L	$_{I}+(a_{LF}y_{F})L_{F}$	$L=a_{LH}Y_{H}+a_{I}$.F.Y _F
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	УF	$\boldsymbol{a_{LF}}{=}1/\boldsymbol{y_{F}}$	L _H &L _F	$Y_H\&Y_F$	K=K _H +K _F I	$=L_H+L_F$
Case 1.	Total	1.3835		4.7448	0.21076	1295	6144	8500	1295
	H: capital-goods	3.7980		10.1668	0.09836	90.64	921.55	3500	91
	F: consumption-goo	ods	0.9574	4.3367	0.23059	1204.26	5222.45	5000	1204
Case 2.	Total	1.3664		4.8039	0.20817	1295	6221	8500	1295
	H: capital-goods	2.1392		5.4261	0.18429	211.07	1145.28	2450	211
	F: consumption-good	ods	1.1921	4.6827	0.21355	1083.83	5075.24	6050	1084
Case 3.	Total	1.2377		6.0150	0.16625	1295	7789	9640	1295
	H: capital-goods	2.0231		6.5572	0.15250	211.07	1384.03	2800	211
	F: consumption-goo	ods	1.0680	5.9094	0.16922	1083.83	6404.79	6840	1084

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T3 Case 2. Both K and L positively shift to equalize the profit rate in both goods Uzawa [Country=capital-goods+consumption-goods: T=H+F $6221 _{AY(0)Y(0)} 0.01245 _{A(0)=k(0)}^{1-c}$											
Country=	capital-g	oods+con	sumption-	goods: T	=H+F	6221	$\Delta Y(0)/Y(0)$	0.01245	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$	
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)	
0.00755	1295	8500	341	227	568	5652	6221	3019	2678	4.0455	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{STI/Y}	s _{SH/Y}	w(0)	
0.09132	1.36645	0.06683	6.5642	4.8039	0.48527	0.6000	0.45544	0.05479	0.43048	4.3652	
H: capita	120.43	1050.00	$\Delta K/K$:	-0.3	-0.15	242.95	$\Delta Y_{H(0)}/Y_{H(0)}$	0.24278			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)	
0.00755	211.07	2450.00	76.24	33	108.91	1036.37	1145.28	1278.84	1202.60	4.2977	
α	$\Omega(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s_{H}	$s_{S\Pi/Y}$	$\mathbf{s}_{\mathrm{SH/Y}}$	W _{H(0)}	
0.09509	2.13921	0.04445	11.6076	5.4261	1.11661	0.7000	1.12493	0.06657	1.05005	4.9101	
F: consur	nption-go	19.22	$\Delta L/L$:	-0.1	-0.05		$\Delta Y_{F(0)}/Y_{F(0)}$	-0.02819			
n	L(0)	K(0)	S _Π (0)	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)	
0.00755	1083.83	6050.00	264.58	194.54	459.12	4616.12	5075.24	1739.82	1475.24	4.0081	
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$\mathbf{s}_{S\Pi/Y}$	s _{SH/Y}	$W_{F(0)}$	
0.09046	1.19206	0.07589	5.5820	4.6827	0.34281	0.5763	0.30666	0.05213	0.29067	4.2591	
							$Y_{H(0)}/Y_{F(0)}$	0.22566			

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The remove curve, D_K , and the assets valuation ratio, v										
	Ω^*	I/K	g_{κ}^{*}	Slope B_K	r*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$	
Case 1. Total	1.3835	0.2388	0.1469	1.6261	0.0578	0.0356	1.6261	1.0000	1.6261	
H: capital-goods	3.7980	0.2536	0.2084	1.2168	0.0366	0.0301	1.2168	1.0000	1.2168	
F: consumption-goo	0.9574	0.2285	0.1200	1.9039	0.0727	0.0382	1.9039	1.0000	1.9039	
Case 2. Total	1.3664	0.2921	0.1486	1.9656	0.0660	0.0336	1.9656	1.0000	1.6322	
H: capital-goods	2.1392	0.4238	0.1986	2.1335	0.0445	0.0208	2.1335	1.0000	1.4093	
F: consumption-goo	1.1921	0.2388	0.1226	1.9476	0.0759	0.0390	1.9476	1.0000	1.7162	
Case 3. Total	1.2377	0.2951	0.1481	1.9932	0.0634	0.0318	1.9932	1.0000	1.6998	
H: capital-goods	2.0231	0.3700	0.1952	1.8954	0.0389	0.0205	1.8954	1.0000	1.4387	
F: consumption-goo	1.0680	0.2644	0.1225	2.1584	0.0839	0.0389	2.1584	1.0000	1.8026	
. –										

5. The relative pr	ice level:	real vs. r	nominal	(a)	Inf. or def	(b)		(c)	
	r(0)	$r = \partial Y t / \partial K t$	P _Y =r(0)/r real	r _{M(0)} given	$p_{Y}=r_{M(0)}/r_{rea}$	r_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)
Case 1. Total	0.05782	0.05782	1.0000	0.0330	0.5707	0.0356	0.9280	0.0228	1.4462
H: capital-goods	0.03661	0.03661	1.0000	0.0330	0.9014	0.0301	1.0969	0.0173	1.9064
F: consumption-goo	0.07268	0.07268	1.0000	0.0330	0.4541	0.0382	0.8645	0.0261	1.2647
Case 2. Total	0.06683	0.06683	1.0000	0.0330	0.4938	0.0404	0.8160	0.0228	1.4462
H: capital-goods	0.04445	0.04445	1.0000	0.0330	0.7424	0.0315	1.0462	0.0245	1.3477
F: consumption-goo	0.07589	0.07589	1.0000	0.0330	0.4349	0.0442	0.7463	0.0214	1.5394
Case 3. Total	0.07083	0.07083	1.0000	0.0330	0.4659	0.0373	0.8852	0.0287	1.1511
H: capital-goods	0.03890	0.03890	1.0000	0.0330	0.8484	0.0270	1.2206	0.0245	1.3477
F: consumption-goo	0.08390	0.08390	1.0000	0.0330	0.3933	0.0465	0.7090	0.0236	1.3969

Note: If the price level of output, P_r , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial t / \partial t = \alpha At K^{r,\alpha-1} Lt^{1,\alpha}$ and w(real)= $\partial t / \partial t = (1-\alpha)At K^{\alpha} Lt^{\alpha}$

6. Relat	6. Relationships between price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for P_F Rybczynski										
For H,	$P_H = a_{KH} r_H + a_{LH} w_H$ When real	=nominal, th	e price leve	l is 1.0.	The elasticity of substitution is 1.0						
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$ r_H	r_F	w_H	W_F	P_{H}	P_F	$p = P_H / P_F$				
Case 1.	Total										
	H: capital-goods 0.03661		8.7532		1		1				
	F: consumption-goods	0.07268		4.0349			1				
Case 2.	Total										
	H: capital-goods 0.04445		4.9101		1		1				
	F: consumption-goods	0.07589		4.2591			1				
Case 3.	Total										
	H: capital-goods 0.03890		6.0413		1		1				
	F: consumption-goods	0.08390		5.3799			1				

T3 Case 3	T3 Case 3. Both K amd L much positively shift to equalize the wage rate in both goods Uzawa [1962]											
Country=	capital-g	oods+con	sumption-	goods: T	=H+F	7789	$\Delta Y(0)/Y(0)$	0.26771	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	S _H (0)	A(0)		
0.00755	1295	9640	410	273	683	7106	7789	3454	3044	5.0443		
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	\mathbf{s}_{Π}	\mathbf{s}_{H}	$\mathbf{s}_{\mathrm{SII/Y}}$	s _{SH/Y}	w(0)		
0.08767	1.23767	0.07083	7.4446	6.0150	0.44341	0.6000	0.41250	0.05260	0.39081	5.4877		
H: capita	120.43	700.00	$\Delta K/K$:	-0.2	-0.15	481.70	$\Delta Y_{H(0)}/Y_{H(0)}$	0.50186				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)		
0.00755	211.07	2800.00	65.34	44	108.91	1275.12	1384.03	1278.84	1213.49	5.3503		
α	$\Omega(0)$	$r_{H(0)}$	k(0)	y(0)	s	s_{Π}	s_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}		
0.07869	2.02308	0.03890	13.2658	6.5572	0.92399	0.6000	0.92023	0.04721	0.87678	6.0413		
F: consur	nption-go	19.22	$\Delta L/L$:	-0.1	0.2		$\Delta Y_{F(0)}/Y_{F(0)}$	0.22639				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)		
0.00755	1083.83	6840.00	344.34	229.56	573.90	5830.88	6404.79	2174.77	1830.43	5.0101		
α	$\Omega(0)$	r _{F(0)}	k(0)	y(0)	S	s_{Π}	s_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	$W_{F(0)}$		
0.08961	1.06795	0.08390	6.3109	5.9094	0.33955	0.6000	0.30203	0.05376	0.28579	5.3799		
Using goa	l seek, wh	ere w _F app	roaches w=	w _H			$Y_{H(0)}/Y_{F(0)}$	0.21609				

7. The neutrality of financial assets and the coeffcient x=	$= r/w$ ke*= $\Omega^{*}(1/(1-\alpha))$	xe*/x0=k(0)/ke*

	r CB goal see	M^* at β^*	$r^{*}/r_{M^{*}}$	$c_{CB}=r_M*/r_{CB}$	α_x	$x_0 = \alpha_x / k (\theta$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_e^*
Case 1. Total	0.0228	0.0356	1.6261	1.55842	0.0870	0.0132	1.4231	0.0611	0.2168
H: capital-goods	0.0173	0.0301	1.2168	1.73793	0.1615	0.0042	4.7113	0.0343	0.1220
F: consumption-goo	0.0261	0.0382	1.9039	1.46297	0.0748	0.0180	0.9543	0.0784	0.2298
	goal seek			goal seek	$\alpha_x = \alpha/(1-\alpha)$)			
Case 2. Total	0.0228	0.0404	1.9656	1.47159	0.1005	0.0153	1.4100	0.0713	0.2148
H: capital-goods	0.0245	0.0315	2.1335	0.85090	0.1051	0.0139	2.3172	0.0454	0.3068
F: consumption-goo	0.0214	0.0442	1.9476	1.81763	0.0995	0.0134	1.2131	0.0820	0.1634
Case 3. Total	0.0287	0.0373	1.9932	1.10895	0.0961	0.0117	1.2633	0.0761	0.1536
H: capital-goods	0.0245	0.0270	1.8954	0.83812	0.0854	0.0122	2.1486	0.0398	0.3062
F: consumption-goo	0.0236	0.0465	2.1584	1.64544	0.0984	0.0118	1.0749	0.0916	0.1294
Note: When the effect	ctive labour	is used, t	he coeffic	ient, x_0 ar	dx_e , are	connected v	vith <i>ke</i> (0) (see also b	elow).

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(re;	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$
Case 1. Total	6.5642	(Δ(w/r)/(w/r)		4.3652	75.49	0.0132	0.0870	6.5642
H: capital-goods	38.6130	0.0000	0.0000	#DIV/0!	8.7532	239.11	0.0042	0.1615	38.6130
F: consumption-goo	4.1519	0.0000	0.0000	#DIV/0!	4.0349	55.52	0.0180	0.0748	4.1519
							=α/	$(1-\alpha)=\alpha_x$	=k(0)
Case 2. Total	6.5642				4.3652	65.32	0.0153	0.1005	6.5642
H: capital-goods	11.6076	-0.6994	(0.5380)	-1.2999	4.9101	110.46	0.0091	0.1051	11.6076
F: consumption-goo	5.5820	0.3444	0.0109	-31.6386	4.2591	56.12	0.0178	0.0995	5.5820
Case 3. Total	7.4446				5.4877	77.48	0.0129	0.0961	7.4446
H: capital-goods	13.2658	-0.6564	(0.3504)	-1.8733	6.0413	155.32	0.0064	0.0854	13.2658
F: consumption-goo		0.5200	0.1549	-3.3566		64.12	0.0156	0.0984	6.3109
Note: When the affe	ativa labor	r is used t	he ourrent	waga rota	ond the pr	sfit roto or	a connecter	with b(3)

Note: When the effective labour is used, the current wage rate and the profit rate are connected with k(0).

Rybczenski [1955] only holds under the condition of H-O.

9. Introduction of relative price level, $p = P_H / P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941]

$r_F = r_F(0) = \partial Y_F / \partial K_F$	$r_{\rm H}(0)_{\rm nominal} = \mathbf{p} \cdot (\partial Y_{\rm H} / \partial I_{\rm H})$	K_H), where $p=P_H/P_F$	$w_F = w_F(0) = \partial Y_F / \partial L_F$	$w_{H(0)nominal} = p \cdot (\partial Y_H / \partial L_H)$

	Marginal productivity	r r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	$P_F = p = P_H / P_F$	Changes (%)
Case 1.	Total	0.05782		4.3652				for r & w
	H: capital-goods	0.03661		8.7532		1	1.00000	1.2143
	F: consumption-go	ods	0.07268		4.0349		1	1.0625
Case 2.	Total	0.06683		4.3652				1.0442
	H: capital-goods	0.04445		4.9101		1	1.00000	1.1545
	F: consumption-go	ods	0.07589		4.2591		1	0.5609
Case 3.	Total	0.07083		5.4877				0.6902
	H: capital-goods	0.03890		6.0413		1	1.00000	1.0556
	F: consumption-go	ods	0.08390		5.3799		1	1.3333

		0		-	orofit and ountry: W	0	6144		Y(0) up w A(0)=k(0	ith $\mathbf{p} \neq 1$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	8500	295	197	492	5652	6144	2464	2169.12	4.0817
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)
0.08000	1.38346	0.05782	6.5642	4.7448	0.40105	0.6000	0.37085	0.04800	0.35305	4.3652
H: capita	l-ample c	ountry	s=S/Y	0.40105	0.26068	0.14037		0.44115		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	90.64	3500.00	89.69	38	128.13	793.42	921.55	1087.01	997.32	6.1175
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s _H	$\mathbf{s}_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}
0.13903	3.79797	0.03661	38.6130	10.1668	1.17955	0.7000	1.19891	0.09732	1.08223	8.7532
F: laour-a	ample cou	intry	c=1-s	0.59895						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1204.26	5000.00	205.22	158.17	363.38	4859.07	5222.45	1377.02	1171.80	3.9277
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$\mathbf{s}_{\mathrm{SII/Y}}$	s _{SH/Y}	$W_{F(0)}$
0.06958	0.95740	0.07268	4.1519	4.3367	0.26367	0.5647	0.23356	0.03930	0.22438	4.0349
Cases corr	espond wi	ith Hecksh	er-Ohlin b	y region.			$Y_{H(0)}\!/Y_{F(0)}$	0.17646	Uzawa [196]	2 :Ω _H >Ω _F

	1. Basic variables and	parameters under convergence	(delta=alpha)
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	$g_{Y}^{*=}g_{K}^{*}$	g _ *	g ,*	${\it \Omega}^*$	<i>r</i> *	i	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
Case 1. World	0.1469	0.1272	0.1383	1.3835	0.0578	0.33044	0.6150	0.00755	0.08000
H: capital-ample country	0.2084	0.1716	0.1993	3.7980	0.0366	0.96311	0.8218	0.00755	0.13903
F: labour-ample country	0.1200	0.1039	0.1116	0.9574	0.0727	0.21880	0.5252	0.00755	0.06958
Case 2. World	0.1790	0.1546	0.1701	1.3664	0.0668	0.39918	0.6127	0.00755	0.09132
H: capital-ample country	0.3001	0.2627	0.2904	2.1392	0.0445	0.90470	0.7096	0.00755	0.09509
F: labour-ample country	0.1394	0.1190	0.1308	1.1921	0.0759	0.28510	0.5827	0.00755	0.09046
Case 3. World	0.1736	0.1504	0.1648	1.2377	0.0708	0.36524	0.5883	0.00755	0.08767
H: capital-ample country	0.2572	0.2283	0.2478	2.0231	0.0389	0.74864	0.6951	0.00755	0.07869
F: labour-ample country	0.1467	0.1257	0.1381	1.0680	0.0839	0.28240	0.5548	0.00755	0.08961

2. Basic variables and parameters under the current situation (delta>alpha)

at Dusie fullables	and part	ameters e	maer ene	current 5	itumeron.	(acma · a	pila /		
	g Y(a)	$g_{K(a)}$	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y (0)
Case 1. World	0.0800	0.3000	0.0491	0.0718	0.0890	0.84900	-0.2340	6.5642	4.7448
H: capital-ample country	0.0400	0.4000	0.0255	0.0322	0.0704	0.97943	-0.1576	38.6130	10.1668
F: labour-ample country	0.0108	0.1039	-0.0034	0.0032	0.0956	1.01633	-0.4911	4.1519	4.3367
For min capital goo	od growth	0.0578	_						
Case 2. World	0.0800	0.3000	0.0457	0.0718	0.0862	0.88649	-0.2738	6.5642	4.8039
H: capital-ample country	0.0400	0.4000	-0.0049	0.0322	0.0894	1.00531	-0.2957	11.6076	5.4261
F: labour-ample country	0.0443	0.0933	0.0290	0.0365	0.0851	0.89932	-0.3167	5.5820	4.6827
Case 3. World	0.0800	0.3000	0.0468	0.0718	0.0867	0.87206	-0.2838	7.4446	6.0150
H: capital-ample country	0.0400	0.4000	0.0016	0.0322	0.0846	0.99787	-0.3028	13.2658	6.5572
F: labour-ample country	0.0453	0.0940	0.0300	0.0375	0.0858	0.89453	-0.3398	6.3109	5.9094
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	α)n	delta=(n+	α(i-iβ*-n))/	$(i(1-\beta^*))$	$B_{actual(\delta > \alpha)}$	⊨1-((1/i)(g _A	_(a) k(0)^(δ	-α))	

Sto	per-Samuelson

3. Relat	ionships between q	uantities	$K_H \& I$	K_F and I	$L_H \& L_F$	K=(a _{KH} ·y _H)L	$H^+(a_{KF}.y_F)L_F$	$K = a_{KH} Y_{H} +$	a _{KF} .Y _F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			Ун	$\boldsymbol{a_{LH}}{=}1/y_{H}$	$L=(a_{LH}y_{H})L_{H}$	$(a_{LF},y_F)L_F$	$L=a_{LH}Y_{H}+$	a _{LF} .Y _F
For L,	$a_{LH}=1/y_{H}$ $a_{LF}=1/y_{F}$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	$y_{\rm F}$	$\boldsymbol{a_{LF}}{=}1/\boldsymbol{y_{F}}$	$L_H \& L_F$	$Y_{\rm H}\&Y_{\rm F}$	$K = K_H + K_F$	$L=L_H+L_F$
Case 1.	World	1.3835		4.7448	0.21076	1295	6144	8500.00	1294.90
	H: capital-ample country	3.7980		10.1668	0.09836	90.64	921.55	3500	91
	F: labour-ample country		0.9574	4.3367	0.23059	1204.26	5222.45	5000	1204
Case 2.	World	1.3664		4.8039	0.20817	1295	6221	8500	1295
	H: capital-ample country	2.1392		5.4261	0.18429	211.07	1145.28	2450	211
	F: labour-ample country		1.1921	4.6827	0.21355	1083.83	5075.24	6050	1084
Case 3.	World	1.2377		6.0150	0.16625	1295	7789	9640	1295
	H: capital-ample country	2.0231		6.5572	0.15250	211.07	1384.03	2800	211
	F: labour-ample country		1.0680	5.9094	0.16922	1083.83	6404.79	6840	1084

T4 Case 2	. Using r	and w wit	h the price	level	Here, star	t from the	e proice lev	/el	Uzav	va [1962]
World=c:	apital-am	ple counti	y+labour-	ample co	untry: W[6221	$\Delta Y(0)/Y(0)$	0.01245	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	8500	341	227	568	5652	6221	3019	2677.84	4.0455
α	$\Omega(0)$	r(0)	k(0)	y(0)	S	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	w(0)
0.09132	1.36645	0.16039	6.5642	4.8039	0.48527	0.6000	0.45544	0.05479	0.43048	3.0987
H: capita	120.43	1050.00	$\Delta K/K$:	-0.3	-0.15	242.95	$\Delta Y_{H(0)}/Y_{H(0)}$	0.24278		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)
0.00755	211.07	2450.00	65.34	44	108.91	1036.37	1145.28	1278.84	1213.49	4.2977
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	W _{H(0)}
0.09509	2.13921	0.16039	11.6076	5.4261	1.11661	0.6000	1.12367	0.05706	1.05956	3.0987
F: laour-a	ample cou	19.22	ΔL/L:	-0.1	-0.05		$\Delta Y_{F(0)}/Y_{F(0)}$	-0.02819		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1083.83	6050.00	275.47	183.65	459.12	4616.12	5075.24	1739.82	1464.35	4.0081
α	$\Omega_{\rm F}(0)$	$r_{F(0)}$	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{F(0)}
0.09046	1.19206	0.16039	5.5820	4.6827	0.34281	0.6000	0.30509	0.05428	0.28853	3.0987
							$Y_{H(0)}/Y_{F(0)}$	0.22566	Ω	$H(0) > \Omega_{F(0)}$

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The Penrose cu	4. The remove curve, D_K , and the assets valuation ratio, v									
	Ω^*	I/K	g_K^*	Slope B _K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = 1/\beta^*$	
Case 1. World	1.3835	0.2388	0.1469	1.6261	0.0578	0.0356	1.6261	1.0000	1.6261	
H: capital-ample country	3.7980	0.2536	0.2084	1.2168	0.0366	0.0301	1.2168	1.0000	1.2168	
F: labour-ample country	0.9574	0.2285	0.1200	1.9039	0.0727	0.0382	1.9039	1.0000	1.9039	
Case 2. World H: capital-ample country F: labour-ample country	1.3664 2.1392 1.1921	0.2921 0.4229 0.2392	0.1486 0.1986 0.1226	1.9656 2.1290 1.9505	0.0660 0.0445 0.0759	0.0336 0.0209 0.0389	1.9656 2.1290 1.9505	$1.0000 \\ 1.0000 \\ 1.0000$	1.6322 1.4093 1.7163	
Case 3. World H: capital-ample country F: labour-ample country	1.2377 2.0231 1.0680	0.2951 0.3700 0.2644	0.1481 0.1952 0.1225	1.9932 1.8954 2.1584	0.0634 0.0389 0.0839	0.0318 0.0205 0.0389	1.9932 1.8954 2.1584	1.0000 1.0000 1.0000	1.6998 1.4387 1.8026	

5. The relative price level: real vs. nominal (a) Inf or def (b)								(c)	
	r(0)	r=əYt/əKt	Py=r(0)/r real	r _{M(0)} given	py=rM(0)/r real	r_M^* at β^*	(a)/(b)	r CB given	(a)/(c)
Case 1. World	0.05782	0.05782	1.0000	0.0330	0.5707	0.0356	0.9280	0.027	1.2222
H: capital-ample country	0.03661	0.03661	1.0000	0.0330	0.9014	0.0301	1.0969	0.027	1.2222
F: labour-ample country	0.07268	0.07268	1.0000	0.0330	0.4541	0.0382	0.8645	0.027	1.2222
Case 2. World	0.16039	0.06683	2.4001	0.0325	0.4863	0.0404	0.8037	0.027	1.2037
H: capital-ample country	0.16039	0.04445	3.6082	0.0300	0.6749	0.0315	0.9511	0.027	1.1111
F: labour-ample country	0.16039	0.07589	2.1135	0.0330	0.4349	0.0442	0.7463	0.027	1.2222
Case 3. World	0.09324	0.07083	1.3164	0.0310	0.4377	0.0373	0.8316	0.027	1.1481
H: capital-ample country	0.09324	0.03890	2.3972	0.0330	0.8484	0.0270	1.2206	0.027	1.2222
F: labour-ample country	0.09324	0.08390	1.1113	0.0300	0.3576	0.0465	0.6445	0.027	1.1111
H: capital-ample country	0.09324	0.03890	2.3972	0.0330	0.8484	0.0270	1.2206	0.027	1.2222

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial Yt/\partial Kt^{\alpha a - 1}Lt^{1-\alpha}$ and w(real)= $\partial Yt/\partial Lt = (1-\alpha)AtK^{\alpha}Lt^{\alpha}$

6. Relat	ionships between pr	ice levels: r_H & w_H for P_H and r_F	& w_F for P_F	Stolper-Samuelson
For H,	$P_{H}=a_{KH}r_{H}+a_{LH}w_{H}v_{H}$	When real=nominal, the price level is 1.0.	The elasticity	of substitution is 1.0.

			,						
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	r_{H}	r_F	W_H	W_F	P_{H}	P_{F}	$p = P_H / P_F$	
Case 1.	World	0.05782		4.3652		1.0000		1.0000	For p,
	H: capital-ample country	0.03661		8.7532		1		1	using goal
	F: labour-ample country		0.07268		4.0349		1		seek
Case 2.	World	0.16039		3.0987		0.8642		0.8642	Y(0)
	H: capital-ample country	0.16039		3.0987		1.17811		1.17811	6221
	F: labour-ample country		0.16039		3.0987		1		6221
Case 3.	World	0.09324		5.3210		1.0000		1.0000	Y(0)
	H: capital-ample country	0.09324		5.3210		1.00009		1.00009	7789
	F: labour-ample country		0.09324		5.3210		1		7789

T4 Case 3	T4 Case 3. Using r and w with the price level Here, start from the proice level Uzawa [1962]										
World=c	apital-am	ple counti	y+labour-	ample co	untry: W	7788.82	$\Delta Y(0)/Y(0)$	0.26771	$A(0)=k(0)^{1-\alpha}/\Omega(0)$		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	S _H (0)	A(0)	
0.00755	1295	9640	410	273	683	7106	7789	3454	3044	5.0443	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)	
0.08767	1.23767	0.09324	7.4446	6.0150	0.44341	0.6000	0.41250	0.05260	0.39081	5.3210	
H: capita	120.43	700.00	$\Delta K/K$:	-0.2	-0.15	481.70	$\Delta Y_{H(0)}/Y_{H(0)}$	0.50186			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)	
0.00755	211.07	2800.00	65.34	44	108.91	1275.12	1384.03	1278.84	1213.49	5.3503	
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	w _{H(0)}	
0.07869	2.02308	0.09324	13.2658	6.5572	0.92399	0.6000	0.92023	0.04721	0.87678	5.3210	
F: laour-a	ample cou	19.22	ΔL/L:	-0.1	0.2		$\Delta Y_{F(0)}/Y_{F(0)}$	0.22639			
n	L(0)	K(0)	S _Π (0)	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)	
0.00755	1083.83	6840.00	344.34	229.56	573.90	5830.88	6404.79	2174.77	1830.43	5.0101	
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	s _H	$s_{S\Pi/Y}$	$s_{\rm SH/Y}$	w _{F(0)}	
0.08961	1.06795	0.09324	6.3109	5.9094	0.33955	0.6000	0.30203	0.05376	0.28579	5.3210	
S-S proposes that if the price of H goods rises then the price of F go $Y_{H(0)}/Y_{F(0)}$ 0.21609 $\Omega_{H(0)} > \Omega_{F(0)}$											
7. The n	7. The neutrality of financial assets and the coefficient $x=r/w$ ke*= $\Omega^{*}(1/(1-\alpha))$ xe*/x0=k(0)/ke*										

7. The neutranty of	of financial assets	and the coefficient	$\lambda = I/W$	Ke^{-32} (1/(1- α))	$\Lambda_e / \Lambda_0 - \kappa(0) / \kappa c^{-1}$		
	$r_{CB \text{ given}} r_M^*$ at β^*	$r^{*}/r_{M^{*}}$ $c_{CB}=r_{M}^{*}/r_{CB}$	$\alpha_x = x_0$	$= \alpha_x / k (0 $ ke*	$x_e^* = \alpha_x / ke^* = X_0 / X_e^*$		
Case 1. World	0.027 0.0356	1.6261 1.31705	0.0870 (0.0132 1.4231	0.0611 0.2168		
H: capital-ample country	0.027 0.0301	1.2168 1.11423	0.1615 (0.0042 4.7113	0.0343 0.1220		
F: labour-ample country	0.027 0.0382	1.9039 1.41381	0.0748 0	0.0180 0.9543	0.0784 0.2298		
			$\alpha_x = \alpha/(1-\alpha)$				
Case 2. World	0.027 0.0404	1.9656 1.24370	0.1005 (0.0153 1.4100	0.0713 0.2148		
H: capital-ample country	0.027 0.0315	2.1290 0.77330	0.1051 (0.0139 2.3172	0.0454 0.3068		
F: labour-ample country	0.027 0.0442	1.9505 1.44099	0.0995 (0.0134 1.2131	0.0820 0.1634		
Case 3. World	0.027 0.0373	1.9932 1.17745	0.0961 0	0.0117 1.2633	0.0761 0.1536		
H: capital-ample country	0.027 0.0270	1.8954 0.76006	0.0854 (0.0122 2.1486	0.0398 0.3062		
F: labour-ample country	0.027 0.0465	2.1584 1.43972	0.0984 (0.0118 1.0749	0.0916 0.1294		
Note: When the effective labour is used, the coefficient, x_0 and x_e , are connected with ke(0) (see also below).							

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

b. Data for the freeksher-omm, kybezynski, the Stoper-Samuelson, and Leontier paradox										
$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(rea	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$	
Case 1. World	6.5642	(Δ(w/r)/(w/r)		4.3652	75.49	0.0132	0.0870	6.5642	
H: capital-ample country	38.6130	0.0000	0.0000	#DIV/0!	8.7532	239.11	0.0042	0.1615	38.6130	
F: labour-ample country	4.1519	0.0000	0.0000	#DIV/0!	4.0349	55.52	0.0180	0.0748	4.1519	
							=α.	$(1-\alpha)=\alpha_x$	=k(0)	
Case 2. World	6.5642				3.0987	19.32	0.0518	0.3398	1.9414	
H: capital-ample country	11.6076	-0.6994	(0.9192)	-0.7609	3.0987	19.32	0.0518	0.6008	2.0302	
F: labour-ample country	5.5820	0.3444	(0.6520)	0.5283	3.0987	19.32	0.0518	0.2889	1.9215	
Case 3. World	7.4446				5.3210	57.07	0.0175	0.1305	5.4836	
H: capital-ample country		-0.6564	(0.7613)	-0.8622	5.3210	57.07	0.0175	0.2325	4.8741	
,			(,							
F: labour-ample country	6.3109	0.5200	0.0279	-18.6367	5.3210	57.07	0.0175	0.1106	5.6169	
N						<i>a</i>				

Note: When the effective labour is used, the current wage rate and the profit rate are connected with k(0). $r=(y_FP_F-y_HP_H)/(\Omega_Fy_F-\Omega_Hy_H)$ $w = (y_F y_H (\Omega_H P_F - \Omega_F P_H)) / (\Omega_H y_H - \Omega_F y_F)$

9. Introduction of relative price level, p=P_H/P_F: Duality [Jones, R. W., 1965] S-Samuelson [1941] $\mathbf{r}_{\mathbf{r}} = \mathbf{r}_{\mathbf{r}}(0) = \partial \mathbf{Y}_{\mathbf{r}}/\partial \mathbf{K}_{\mathbf{F}} \qquad \mathbf{r}_{\mathbf{H}}(0)_{\text{nominal}} = \mathbf{p} \cdot (\partial \mathbf{Y}_{\mathbf{H}}/\partial \mathbf{K}_{\mathbf{H}}), \text{ where } \mathbf{p} = \mathbf{P}_{\mathbf{H}}/\mathbf{P}_{\mathbf{F}} \quad \mathbf{w}_{\mathbf{r}} = \mathbf{w}_{\mathbf{r}}(0) = \partial \mathbf{Y}_{\mathbf{r}}/\partial \mathbf{L}_{\mathbf{F}} \quad \mathbf{w}_{\mathbf{H}}(0)_{\text{nominal}} = \mathbf{p} \cdot (\partial \mathbf{Y}_{\mathbf{H}}/\partial \mathbf{L}_{\mathbf{H}}).$

1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 = 1 =								, LH)
	Marginal productivity	y r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	$P_F = p = P_H / P_F$	Changes (%)
Case 1.	Total	0.05782		4.3652		1.0000	1.0000	for r & w
	H: capital-goods	0.03661		8.7532		1	1	4.7927
	F: consumption-go	ods	0.07268		4.0349		1	2.5467
Case 2.	Total	0.18560		3.5856		0.8642	0.8642	2.2069
	H: capital-goods	0.17545		3.3896		0.9142	0.9142	1.2829
	F: consumption-go	ods	0.16039		3.0987		1	0.3872
Case 3.	Total	0.09324		5.3209		1.0000	1.0000	0.6078
	H: capital-goods	0.09323		5.3205		1.0001	1.0001	0.7680
	F: consumption-go	ods	0.09324		5.3210		1	1.3187

	T5 Case 1. Both regions have different rates of profit and the wage rates Uzawa [1962]: Ω_{1} > Ω_{1} Country=capital-goods+consumption-goods: T=H+F $A(0)=k(0)^{1-\alpha}/\Omega(0)$										
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)	
0.00755	1295	9816	300	200	500	5652	6152	616	316	4.0295	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s_H	$s_{S\Pi/Y}$	S _{SH/Y}	w(0)	
0.08127	1.59558	0.05094	7.5799	4.7506	0.10013	0.6000	0.05400	0.04876	0.05137	4.3645	
H: capita	l-goods	0.39	s=S/Y	0.10013	0.273	0.273		0.429			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{H}(0)$	S(0)	$S_H(0)$	A(0)	
0.00755	129.67	3828.24	95.55	41	136.50	1543.00	1679.50	264.26	168.71	9.8369	
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	S _{SH/Y}	W _{H(0)}	
0.08127	2.27940	0.03566	29.5233	12.9522	0.15735	0.7000	0.10651	0.05689	0.10046	11.8996	
F: consur	nption-go	oods	1-s	0.89987							
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)	
0.00755	1165.33	5987.76	204.45	159.05	363.50	4109.00	4472.50	351.74	147.29	3.3599	
α	$\Omega_{\rm F}(0)$	$\mathbf{r}_{F(0)}$	k(0)	y(0)	s	s_{Π}	s_{H}	S _{SII/Y}	$\mathbf{s}_{\mathrm{SH/Y}}$	W _{F(0)}	
0.08127	1.33879	0.06071	5.1382	3.8380	0.07864	0.5624	0.03451	0.04571	0.03293	3.5260	
Cases corr	Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.37552$										

1. Basic variables and parameters under convergence (delta=alpha)

	$g_{Y}^{*=}g_{K}^{*}$	$g_A *$	g_y^*	${\it \Omega}^*$	r^*	i	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
Case 1. Total	0.0386	0.0283	0.0308	1.5956	0.0509	0.08986	0.6851	0.00755	0.08127
H: capital-goods	0.0452	0.0343	0.0373	2.2794	0.0357	0.13726	0.7501	0.00755	0.08127
F: consumption-goo	0.0351	0.0251	0.0273	1.3388	0.0607	0.07206	0.6517	0.00755	0.08127
Case 2. Total	0.0386	0.0283	0.0308	1.5956	0.0509	0.08986	0.6851	0.00755	0.08127
H: capital-goods	0.0441	0.0329	0.0363	1.8026	0.0509	0.11240	0.7070	0.00755	0.09182
F: consumption-goo	0.0362	0.0263	0.0285	1.5166	0.0509	0.08126	0.6765	0.00755	0.07725
Case 3. Total	0.0387	0.0284	0.0309	1.6080	0.0509	0.09056	0.6868	0.00755	0.08191
H: capital-goods	0.0560	0.0409	0.0481	3.0453	0.0491	0.21148	0.8065	0.00755	0.14946
F: consumption-goo	0.0306	0.0214	0.0229	1.2353	0.0521	0.05920	0.6384	0.00755	0.06439

2. Basic variables and parameters under the current situation (delta>alpha)

at Daole tallables	a busic variables and parameters ander the current situation (denta v dipita)										
	g Y(a)	$g_{K(a)}$	$g_{A(a)}$	g y(a)	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)		
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.1146	0.42042	0.2647	7.5799	4.7506		
H: capital-goods	0.0400	0.4000	0.0289	0.0322	0.1087	0.76873	-0.0186	29.5233	12.9522		
F: consumption-goo	-0.0122	0.1272	-0.0294	-0.0196	0.1188	1.43449	-0.7828	5.1382	3.8380		
For min capital-goo	ds growth	0.0509									
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.1146	0.42042	0.2647	7.5799	4.7506		
H: capital-goods	0.0400	0.4000	-0.0036	0.0322	0.0650	1.02929	-0.3223	23.6186	13.1027		
F: consumption-goo	-0.0135	0.1459	-0.0318	-0.0209	0.1374	1.43452	-0.7580	5.7953	3.8212		
Case 3. Total	0.0800	0.3000	0.0485	0.0718	0.1115	0.43138	0.2554	7.5799	4.7139		
H: capital-goods	0.0400	0.4000	-0.0262	0.0322	-0.2120	1.04595	-0.2394	15.5492	5.1059		
F: consumption-goo	0.0456	0.2326	0.0236	0.0378	0.2233	0.47508	0.1634	5.7092	4.6218		
$g_{\lambda(z)} = g_{\lambda(z)} - \alpha g_{\lambda(z)} - (1 - \alpha g_{\lambda(z)})$	α)n (ielta=(n+	α(i-iβ*-n))	$\sqrt{(i(1-B^*))}$	B	1 - ((1/i))(g)	k(0)^(8	-α))			

 $g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta * - n))/(i(1 - \beta *)) \quad \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) + (1 - \alpha)(i - \alpha) + (1 - \alpha)(i - \alpha)(i - \alpha)) + (1 - \alpha)(i - \alpha)(i - \alpha) + (1 - \alpha)(i - \alpha)(i - \alpha)) + (1 - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)) + (1 - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)(i - \alpha)) + (1 - \alpha)(i - \alpha)(i$

Hec	ksc	her-	Oh	lin

3. Relat	ionships between	: K _H & I	K_F and L_H & L_F K=(a_{KH} ·y_H)L_H+(a_{KF} ·y_F)L_F				K=a _{KH} ·Y _H +a _{KF} ·Y _F		
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			У _Н	$\boldsymbol{a_{LH}}{=}1/y_{H}$	$L=(a_{LH}y_{H})L_{H}$	$(a_{LF},y_F)L_F$	$L=a_{LH}Y_{H}+a$	LF.YF
For L,	$a_{LH} = 1/y_H - a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	УF	$a_{LF}\!\!=\!\!1/y_F$	L _H &L _F	$Y_H \& Y_F$	$K{=}K_{H}{+}K_{F}$	$L=L_H+L_F$
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	2.2794		12.9522	0.07721	129.67	1679.50	3828	130
	F: consumption-goods 1			3.8380	0.26055	1165.33	4472.50	5988	1165
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.8026		13.1027	0.07632	129.67	1699.00	3063	130
	F: consumption-go	1.5166	3.8212	0.26170	1165.33	4453.00	6753	1165	
Case 3.	Total	1.6080		4.7139	0.21214	1295	6104	9816	1295
	H: capital-goods	3.0453		5.1059	0.19585	246.20	1257.09	3828	246
	F: consumption-go	1.2353	4.6218	0.21636	1048.80	4847.39	5988	1049	

T5 Case 2	T5 Case 2. K decreases in capital-goods by 20% Uzawa [1962]										
Country=	=capital-g	oods+con	sumption	-goods: T	=H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k($D^{1-\alpha} / \Omega(0)$	
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)	
0.00755	1295	9816	300	200	500	5652	6152	616	316	4.0295	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s _Π	s _H	$s_{S\Pi/Y}$	S _{SH/Y}	w(0)	
0.08127	1.59558	0.05094	7.5799	4.7506	0.10013	0.6000	0.05400	0.04876	0.05137	4.3645	
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	0.01162			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	· Π(0)	W(0)	$Y_{H}(0)$	S(0)	S _H (0)	A(0)	
0.00755	129.67	3062.59	109.21	47	156.01	1543.00	1699.00	211.41	102.21	9.8008	
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}	
0.09182	1.80258	0.05094	23.6186	13.1027	0.12443	0.7000	0.06429	0.06428	0.06016	11.8996	
F: consu	nption-gt	joids g goal :	seek, wher	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	-0.00436			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)	
0.00755	1165.33	6753.41	190.79	153.20	343.99	4109.00	4453.00	404.59	213.79	3.3362	
α	$\Omega_{\rm F}(0)$	$r_{F(0)}$	k(0)	y(0)	s	\mathbf{s}_{Π}	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w _{F(0)}	
0.07725	1.51660	0.05094	5.7953	3.8212	0.09086	0.5546	0.05016	0.04285	0.04801	3.5260	
							$Y_{H(0)}\!/Y_{F(0)}$	0.38154	Uzawa [196	2]:Ω _H >Ω _F	

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The remove curve, D_K , and the assets valuation ratio, v										
	Ω^*	I/K	g_K^*	Slope B_K	r^*	$r_{M^{\phi}}$	Slope A	Slope B _K /A	$v = l/\beta^*$	
Case 1. Total	1.5956	0.0563	0.0386	1.4597	0.0509	0.0349	1.4597	1.0000	1.4597	
H: capital-goods	2.2794	0.0602	0.0452	1.3332	0.0357	0.0267	1.3332	1.0000	1.3332	
F: consumption-goo	1.3388	0.0538	0.0351	1.5345	0.0607	0.0396	1.5345	1.0000	1.5345	
Case 2. Total	1.5956	0.0563	0.0386	1.4597	0.0509	0.0349	1.4597	1.0000	1.4597	
H: capital-goods	1.8026	0.0624	0.0456	1.3673	0.0509	0.0373	1.3673	1.0000	1.4144	
F: consumption-goo	1.5166	0.0536	0.0350	1.5328	0.0509	0.0332	1.5328	1.0000	1.4781	
Case 3. Total	1.6080	0.0563	0.0386	1.4589	0.0513	0.0352	1.4589	1.0000	1.4561	
H: capital-goods	3.0453	0.0694	0.0482	1.4413	0.0491	0.0341	1.4413	1.0000	1.2399	
F: consumption-goo	1.2353	0.0479	0.0346	1.3859	0.0521	0.0376	1.3859	1.0000	1.5663	

5. The relative price level: real vs. nominal (a) Inf. or def (b) (c)											
	r(0)	r=∂Yt/∂Kt	Py=r(0)/r real	r _{M(0)} given	p _Y =r _{M(0)} /r rea	r_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)		
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0349	0.9457	0.0317	1.0394		
H: capital-goods	0.03566	0.03566	1.0000	0.0330	0.9255	0.0267	1.2339	0.0243	1.3572		
F: consumption-goo	0.06071	0.06071	1.0000	0.0330	0.5436	0.0396	0.8342	0.0359	0.9182		
Case 2. Total H: capital-goods	0.05094 0.05094	0.05094 0.05094	1.0000 1.0000	0.0330	0.6479 0.6478	0.0349 0.0360	0.9457 0.9163	0.0317 0.0263	1.0407 1.2544		
F: consumption-goo	0.05094	0.05094	1.0000	0.0330	0.6479	0.0345	0.9576	0.0331	0.9963		
Case 3. Total H: capital-goods	0.05094	0.05094 0.04908	1.0000 1.0000	0.0330	0.6479 0.6724	0.0353	0.9361 0.8337	0.0320	1.0304 1.0689		
F: consumption-goo	0.05213	0.05213	1.0000	0.0330	0.6331	0.0333	0.9916	0.0320	1.0318		

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. <u>r(real</u>)= $\partial Y t_{\partial} K t^{\alpha a \cdot l} L t^{l \cdot \alpha}$ and w(real)= $\partial Y t_{\partial} L t^{-(1-\alpha)} A t K^{\alpha} L t^{\alpha}$

6. Relat	ionships between p	rice levels: r _H &	w _H for P	_H and	$r_F \& i$	w _F for P _F	Rybczynski
For H,	$P_H = a_{KH} \cdot r_H + a_{LH} \cdot w_H$	When real=nominal,	the price leve	l is 1.0.		The elasticity	of substitution is 1.0.

P _F =a _{KF} .r _F +a _{LF} .w _F	r_H	r_F	w_H	W_F	P_{H}	$P_F = p_H/H$	• _F
Total	0.05094		4.3645		1.0000	1.000	0
H: capital-goods	0.03566		11.8996		1		1
F: consumption-goo	ds	0.06071		3.5260		1	
Total	0.05094		4.3645		1.0000	1.000	0
H: capital-goods	0.05094		11.8996		1		1
F: consumption-goo	ds	0.05094		3.5260		1	
Total	0.05094		4.3278		1.0000	1.000	0
H: capital-goods	0.04908		4.3428		1		1
F: consumption-goo	ds	0.05213		4.3243		1	
	$\begin{array}{l} P_F = a_{KF} r_F + a_{LF} . w_F \\ \hline Total \\ H: capital-goods \\ F: consumption-goo \\ Total \\ H: capital-goods \\ \hline F: consumption-goo \\ Total \\ H: capital-goods \\ \end{array}$	$\begin{array}{ c c c c }\hline \mathbf{P}_{\mathrm{F}} = \mathbf{a}_{\mathrm{KF}} \mathbf{r}_{\mathrm{F}} + \mathbf{a}_{\mathrm{LF}} \mathbf{W}_{\mathrm{F}} & r_{H} \\ \hline Total & 0.05094 \\ H: capital-goods & 0.03566 \\ \hline F: consumption-goods \\ \hline Total & 0.05094 \\ H: capital-goods & 0.05094 \\ \hline F: consumption-goods \\ \hline Total & 0.05094 \\ \hline \end{array}$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$

				100/				•.	
T5 Case 3. L de							0.00770		wa [1962]
Country=capita			C				-0.00773		$D)^{1-\alpha}/\Omega(0)$
n L(0)	· · · ·	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755 129		300	200	500	5604	6104	616	316	3.9933
α Ω(0)		k(0)	y(0)	S	s _Π	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)
0.08191 1.6080		7.5799	4.7139	0.10091	0.6000	0.05444	0.04914	0.05177	4.3278
H: capital-good	5					$\Delta Y_{H(0)}/Y_{H(0)}$	-0.25151		
n L(0)		$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755 246.2	3828.24	131.52	56	187.88	1069.21	1257.09	299.44	167.92	3.3882
$\alpha \qquad \Omega_{\rm H}(0)$		k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	$W_{H(0)}$
0.14946 3.0453	0.04908	15.5492	5.1059	0.23820	0.7000	0.14919	0.10462	0.13358	4.3428
F: consumption	-goods	$\Delta L/L$:	-0.1			$\Delta Y_{F(0)}/Y_{F(0)}$	0.08382		
n L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_F(0)$	S(0)	$S_H(0)$	A(0)
0.00755 1048.8	5987.76	168.48	143.64	312.12	4535.27	4847.39	316.56	148.08	4.1314
$\alpha \qquad \Omega_{\rm F}(0)$) r _{F(0)}	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	S _{SH/Y}	$W_{F(0)}$
0.06439 1.2352	0.05213	5.7092	4.6218	0.06531	0.5398	0.03165	0.03476	0.03055	4.3243
						$Y_{H(0)}/Y_{F(0)}$	0.25933	Ω	$H_{(0)} > \Omega_{F(0)}$
					Usi	ng goal see	k, where w		
7. The neutrali	tv of financ	ial assets	and the	coeffcient			*^(1/(1-α))		$k_0 = k(0)/ke^*$
7. The neutran	-				1			-	x_0/x_e^*
<u>C</u> 1 m 1		r_M^* at β^*	$r^{*/r}_{M^{*}}$	$c_{CB}=r_M*/r_{CB}$	α _x	$x_0 = \alpha_x / k (0)$		$\frac{x_e^* = \alpha_x / ke^*}{0.0522}$	
Case 1. Total	0.0317	0.0349	1.4597	1.09913	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods	0.0243	0.0267	1.3332	1.09993	0.0885	$0.0030 \\ 0.0172$	2.4517	0.0361	0.0830
F: consumption-g	00 0.0359 goal seek	0.0396	1.5345	1.10070 goal seek	0.0885		1.3738	0.0644	0.2674
Case 2. Total	0.0317	0.0349	1.4597	1.10047	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods	0.0263	0.0349	1.3673	1.41614	0.1011	0.0037	1.9132	0.0528	0.0709
F: consumption-g		0.0345	1.5328	1.00332	0.0837	0.0153	1.5704	0.0523	0.2863
r. consumption g	0.0551	0.05 15	1.5520	1.00552	0.0057	010100	1.5701	0.0555	0.2005
Case 3. Total	0.0320	0.0353	1.4589	1.09871	0.0892	0.0117	1.6776	0.0532	0.2195
H: capital-goods	0.0320	0.0396	1.4413	1.10290	0.1757	0.0057	3.7035	0.0332	0.1199
F: consumption-g		0.0333	1.3859	1.17601		0.0155	1.2533	0.0549	0.2822
Note: When the e									
8. Data for the									
$\mathbf{p}=\mathbf{P}_{M}/\mathbf{P}_{F}=1$	k(0)	$\Delta k/k(0)$	0000 11010	sigma		w(0)/r(0)		k/(w/r)	$\alpha_{\rm x}({\rm w/r})$
Case 1. Total	7.5799	(A	(w/r)/(w/r)		4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods	29.5233	0.0000	0.0000	#DIV/0!	11.8996	333.73	0.0030	0.0885	29.5233
F: consumption-g		0.0000	0.0000	#DIV/0!	3.5260	58.08	0.0172	0.0885	5.1382
								$(1-\alpha)=\alpha_x$	=k(0)
Case 2. Total	7.5799				4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods	23.6186	-0.2000	(0.3000)	-0.6666	11.8996	233.60	0.0043	0.1011	23.6186
F: consumption-g		0.1279	0.1918	-0.6666	3.5260	69.22	0.0144	0.0837	5.7953
Case 3. Total	7.5799				4.3278	84.96	0.0118	0.0892	7.5799
H: capital-goods	15.5492	-0.4733	(0.7348)	-0.6441	4.3428	88.49	0.0113	0.1757	15.5492
F: consumption-g		0.1111	0.4283	-0.2594		82.96	0.0121	0.0688	5.7092
Note: When the e									
Rybczenski [195				0					/
9. Introduction					ality Llor	165 R W	19651	S_Samual	son [1941]
$r_F = r_F(0) = \partial Y_F / \partial K_F$							W _{H(0)nomina}		
	l productivity		$r_{F(margi.Pro.)}$		W F(matgi.pro.	P_H	P_{F}	$p = P_H / P_F$	
Case 1. Total		0.05094		4.3645					for r & w
	tal-goods	0.03566		11.8996		1		1	1.4286
	umption-goc		0.06071		3.5260		1		1.3764
Case 2. Total		0.05094		4.3645		1			0.8390
	tal-goods	0.05094		11.8996		1		1.0000	0.8587
	umption-goc		0.05094	1	3.5260	l	1.0000		1.0000
Case 3. Total		0.05094		4.3278		1.0005		1.0000	0.3650
H: cap	tal-goods	0.04908	0.05213	4.3428	4.3243	1.0000	1.0000	1.0000	$1.0000 \\ 1.2264$
E	umption-goc								

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T6 Case 1 Country=	Uzawa [1962] $A(0)=k(0)^{1-\alpha}/\Omega(0)$									
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1253	953	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$\mathbf{s}_{\mathrm{SII/Y}}$	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.20367	0.6000	0.16285	0.04876	0.15491	4.3645
H: capita	l-goods	0.39	s=S/Y	0.20367	0.273	0.273		0.429		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	263.76	3828.24	95.55	41	136.50	1543.00	1679.50	537.54	441.99	5.1233
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}
0.08127	2.27940	0.03566	14.5143	6.3676	0.32006	0.7000	0.27904	0.05689	0.26317	5.8501
F: consu	nption-go	ods	1-s	0.79633						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1031.24	5987.76	204.45	159.05	363.50	4109.00	4472.50	715.46	511.01	3.7593
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	$W_{F(0)}$
0.08127	1.33879	0.06071	5.8064	4.3370	0.15997	0.5624	0.11973	0.04571	0.11426	3.9845
Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.37552$ $\Omega_{H(0)} > \Omega_{F(0)}$										$H(0) > \Omega_{F(0)}$

1. Basic variables and	paramet	ers under	^c onvergen	ce (delta=alp	ha)
	*		* ~*		,

1. Basic variables	and para	meters u	nder con	vergence	(delta=a	alpha)			
	$g_Y *= g_K^*$	g_A^*	g_y^*	\varOmega^*	r^*	i	$\beta^{*}{}_{(\delta=lpha)}$	n	α
Case 1. Total	0.0716	0.0584	0.0636	1.5956	0.0509	0.17269	0.6617	0.00755	0.08127
H: capital-goods	0.0860	0.0715	0.0778	2.2794	0.0357	0.26743	0.7326	0.00755	0.08127
F: consumption-goo	0.0640	0.0515	0.0560	1.3388	0.0607	0.13712	0.6247	0.00755	0.08127
Case 2. Total	0.0716	0.0584	0.0636	1.5956	0.0509	0.17269	0.6617	0.00755	0.08127
H: capital-goods	0.0822	0.0672	0.0740	1.8026	0.0509	0.21534	0.6877	0.00755	0.09182
F: consumption-goo	0.0671	0.0546	0.0592	1.5166	0.0509	0.15642	0.6510	0.00755	0.07725
Case 3. Total H: capital-goods F: consumption-goo	0.0700 0.0957 0.0564	0.0573 0.0787 0.0452	0.0620 0.0875 0.0485	1.4994 2.0444 1.2811	0.0509 0.0491 0.0521	0.16229 0.27426 0.11743	0.6471 0.7131 0.6149	0.00755 0.00755 0.00755	0.07638 0.10033 0.06678

2. Basic variables and parameters under the current situation (delta>alpha)

	g Y(a)	g K(a)	$g_{A(a)}$	g y(a)	delta	$\beta_{actual (\delta > \alpha)}$	β*-β	k(0)	y(0)
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.0974	0.70873	-0.0470	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0289	0.0322	0.0944	0.88795	-0.1553	14.5143	6.3676
F: consumption-goo	0.0393	0.1079	0.0236	0.0315	0.0996	0.82240	-0.1977	5.8064	4.3370
For min capital-good	ds growth	0.0509	-						
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.0974	0.70873	-0.0470	7.5799	4.7506
H: capital-goods	0.0400	0.4000	-0.0036	0.0322	0.0787	1.01611	-0.3284	11.6114	6.4415
F: consumption-goo	0.0389	0.1145	0.0231	0.0311	0.1062	0.84438	-0.1933	6.5488	4.3181
			-						
Case 3. Total	0.0800	0.3000	0.0501	0.0718	0.1063	0.67190	-0.0248	7.5799	5.0552
H: capital-goods	0.0400	0.4000	-0.0069	0.0322	0.0683	1.02342	-0.3103	10.4345	5.1041
F: consumption-goo	0.0474	0.1436	0.0307	0.0395	0.1351	0.70259	-0.0877	6.4515	5.0358
$g_{\Lambda(z)} = g_{\lambda(z)} - \alpha g_{\lambda(z)} - (1 - \alpha)$	α)n d	elta=(n+	α(i-iβ*-n))	/(i(1-8*)) (3	1 - ((1/i)(g))	k(0)^(8	-a))	

 $g_{\Lambda(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta * - n))/(i(1 - \beta *)) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{\Lambda(a)}k(0)^{\wedge}(\delta - \alpha)))$

Heckscher-Ohl	lin
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3. Relat	ionships between	quantities	: K _H & I	K _F and I	L _H & L _F	K=(a _{KH} .y _H)L	H+(a _{KF} .y _F)L _F	K=a _{KH} ·Y _H +a	KF.YF			
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			\mathbf{y}_{H}	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} .y _{H)} L ₄	t+(a _{LF} .y _F)L _F	$L=a_{LH}Y_{H}+a$	LF.YF			
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	\mathbf{y}_{F}	$\boldsymbol{a_{LF}}{=}1/y_F$	L _H &L _F	$Y_H \& Y_F$	$K = K_H + K_F$	$L=L_{H}+L_{F}$			
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295			
	H: capital-goods	2.2794		6.3676	0.15705	263.76	1679.50	3828	264			
	F: consumption-goo	1.3388	4.3370	0.23057	1031.24	4472.50	5988	1031				
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295			
	H: capital-goods	1.8026		6.4415	0.15524	263.76	1699.00	3063	264			
	F: consumption-goo	ods	1.5166	4.3181	0.23158	1031.24	4453.00	6753	1031			
Case 3.	Total	1.4994		5.0552	0.19782	1295	6546	9816	1295			
	H: capital-goods	2.0444		5.1041	0.19592	366.88	1872.59	3828	367			
	F: consumption-goo	ods	1.2811	5.0358	0.19858	928.12	4673.83	5988	928			

T6 Case 2	2. K decre	1	Uzawa [196	2]:Ω _H >Ω _F						
Country=	-capital-g	oods+con	$\Delta Y(0)/Y(0)$	0.00000	A(0) = k(0)	$\left(1-\frac{\alpha}{2}\right)^{1-\alpha}$				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1253	953	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.20367	0.6000	0.16285	0.04876	0.15491	4.3645
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	0.01162		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	263.76	3062.59	109.21	47	156.01	1543.00	1699.00	430.03	320.82	5.1429
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	S _{SH/Y}	W _{H(0)}
0.09182	1.80258	0.05094	11.6114	6.4415	0.25311	0.7000	0.20180	0.06428	0.18883	5.8501
F: consur	nption-ge	loids g goal :	seek, wher	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	-0.00436		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1031.24	6753.41	190.79	153.20	343.99	4109.00	4453.00	822.97	632.18	3.7346
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s _H	$s_{\rm SII/Y}$	s _{SH/Y}	w _{F(0)}
0.07725	1.51660	0.05094	6.5488	4.3181	0.18481	0.5546	0.14832	0.04285	0.14197	3.9845
							$Y_{H(0)}/Y_{F(0)}$	0.38154		

4. The Penrose curve, B_K , and the assets valuation ratio, v

	Ω^*	I/K	g_K^*	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. Total	1.5956	0.1082	0.0716	1.5113	0.0509	0.0337	1.5113	1.0000	1.5113
H: capital-goods	2.2794	0.1173	0.0860	1.3649	0.0357	0.0261	1.3649	1.0000	1.3649
F: consumption-goo	1.3388	0.1024	0.0640	1.6007	0.0607	0.0379	1.6007	1.0000	1.6007
Case 2. Total	1.5956	0.1082	0.0716	1.5113	0.0509	0.0337	1.5113	1.0000	1.5113
H: capital-goods	1.8026	0.1195	0.0869	1.3752	0.0509	0.0370	1.3752	1.0000	1.4541
F: consumption-goo	1.5166	0.1031	0.0637	1.6182	0.0509	0.0315	1.6182	1.0000	1.5360
Case 3. Total	1.4994	0.1082	0.0713	1.5185	0.0479	0.0315	1.5185	1.0000	1.5455
H: capital-goods	2.0444	0.1342	0.0876	1.5311	0.0491	0.0321	1.5311	1.0000	1.4023
F: consumption-goo	1.2811	0.0917	0.0631	1.4525	0.0521	0.0359	1.4525	1.0000	1.6262

5. The relative pri	nominal	(a)	Inf. or def	(b)		(c)			
	r(0)	r=∂Yt/∂Kt	P _Y =r(0)/r real	r M(0) given	py=rM(0)/r rea	M_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0337	0.9791	0.0306	1.0770
H: capital-goods	0.03566	0.03566	1.0000	0.0330	0.9255	0.0261	1.2632	0.0334	0.9891
F: consumption-goo	0.06071	0.06071	1.0000	0.0330	0.5436	0.0379	0.8702	0.0293	1.1273
Case 2. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0337	0.9791	0.0306	1.0779
H: capital-goods	0.05094	0.05094	1.0000	0.0330	0.6478	0.0350	0.9420	0.0275	1.1999
F: consumption-goo	0.05094	0.05094	1.0000	0.0330	0.6479	0.0332	0.9951	0.0319	1.0344
Case 3. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0310	1.0654	0.0309	1.0670
H: capital-goods	0.04908	0.04908	1.0000	0.0330	0.6724	0.0350	0.9429	0.0314	1.0509
F: consumption-goo	0.05213	0.05213	1.0000	0.0330	0.6331	0.0321	1.0295	0.0310	1.0644
NT / TC/1 1	1 0 /	. n .	1		1.4 1.4	· · · ·	1.12 1.1	1 1	1.0

Note: If the price level of output, P_Y , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. <u>rreal</u>= $\Theta V (\Delta K t = \alpha A t K t^{\alpha \alpha} t t^{1/\alpha} a md w (real) = \Theta V (\Delta t t t^{1/2} t t^{\alpha} t t^{1/2} t t^{1/2} t t^{\alpha} t t^{1/2} t t^{1/2} t t^{\alpha} t t^{1/2} t t^{\alpha} t t^{1/2} t t^{1/2} t t^{\alpha} t t^{1/2} t t^{\alpha} t t^{1/2} t t^{1/$

6. Relat	ionships between p	price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for					r P _F Rybezynski		
For H,	$P_H = a_{KH} \cdot r_H + a_{LH} \cdot w_H$	When real=r	nominal, tl	ne price level	is 1.0.	The e	lasticity	of substitution is 1.	0.
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	r_H	r_F	W_H	W_F	P_{H}	P_F	$p = P_H / P_F$	
Case 1.	Total	0.05094		4.3645		1.0000		1.0000	
	H: capital-goods	0.03566		5.8501		1		1	

	H: capital-goods	0.03566		5.8501		1		1	
	F: consumption-goo	ds	0.06071		3.9845		1		
Case 2.	Total	0.05094		4.3645		1.0000		1.0000	
	H: capital-goods	0.05094		5.8501		1		1	
	F: consumption-goods								
	F: consumption-goo	ds	0.05094		3.9845		1		
Case 3.	F: consumption-goo Total	ds 0.05094	0.05094	4.6691	3.9845	1.0000	1	1.0000	
Case 3.			0.05094	4.6691 4.5920	3.9845	1.0000	1	1.0000	

T6 Case 3. L decreases in consumption-goods by 10% Uzawa [1962]									a [1962]
Country=capital-goods+consumption-goods: $T=H+F$ $\Delta Y(0)/Y(0)$ 0.06411									$)^{1-\alpha}/\Omega(0)$
n L(0) K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	S _H (0)	A(0)
0.00755 1	295 9816	300	200	500	6046	6546	1253	953	4.3306
α Ω((0) r(0)	k(0)	y(0)	s	s_{Π}	s_H	S _{SII/Y}	S _{SH/Y}	w(0)
0.07638 1.49	945 0.05094	7.5799	5.0552	0.19140	0.6000	0.15257	0.04583	0.14558	4.6691
H: capital-goo	ods					$\Delta Y_{H(0)}/Y_{H(0)}$	0.11497		
n L(0) K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)
0.00755 36	6.88 3828.24	131.52	56	187.88	1684.71	1872.59	609.08	477.57	4.0340
$\alpha = \Omega_{\rm H}$	(0) $r_{H(0)}$	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	s _{SH/Y}	W _{H(0)}
0.10033 2.04	436 0.04908	10.4345	5.1041	0.32526	0.7000	0.27429	0.07023	0.25503	4.5920
F: consumption	on-goods	ΔL/L:	-0.1			$\Delta Y_{F(0)}/Y_{F(0)}$	0.04501		
n L(0) K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)
0.00755 92	8.12 5987.76	168.48	143.64	312.12	4361.71	4673.83	643.92	475.43	4.4463
$\alpha = \Omega_F$	(0) $r_{F(0)}$	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	s _{SH/Y}	W _{F(0)}
0.06678 1.28	0.05213	6.4515	5.0358	0.13777	0.5398	0.10553	0.03605	0.10172	4.6995
						$Y_{H(0)}/Y_{F(0)}$	0.40065	Ω	$1(0) > \Omega_{F(0)}$
					Usi	ng goal see	k, where v	w _F approach	es w=w _H
7. The neutra	lity of finan	cial assets	and the	coeffcien	t <i>x=r/w</i>	ke∗=Ω*	^α ^(1/(1-α))	x.e*/x.	=k(0)/ke*
	r CB goal se	r_M^* at β^*	r*/r _{M*}	c _{CB} =r _M */r _{CB}	α_x	$x_0 = \alpha_x / k (0$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_c^*
Case 1. Total	0.0306		1.5113	1.09997	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-good	ls 0.0334	0.0261	1.3649	0.78303	0.0885	0.0061	2.4517	0.0361	0.1689
F: consumption	-goo 0.0293	0.0379	1.6007	1.29555	0.0885	0.0152	1.3738	0.0644	0.2366
	goal seel				$\alpha_x = \alpha/(1-\alpha)$				
Case 2. Total	0.0306		1.5113	1.10094	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-good	ls 0.0275	0.0350	1.3752	1.34683	0.1011	0.0076	1.9132	0.0528	0.1442

F: consumption-goo 0.0319 0.0332 1.6182 0.98664 0.0837 0.0135 1.5704 0.0533 0.2534 0.0309 0.0310 1.5185 1.01926 0.0827 0.0117 1.5505 0.0533 Case 3. Total 0.2188 H: capital-goods 0.0314 0.0350 1.53111.020710.11151.45251.157520.0716 0.0085 2.2141 0.0504 0.1683 0.0137 F: consumption-goo 0.0310 0.0321 1.3040 0.0549 0.2499 Note: When the effective labour is used, the coefficient, x_0 and x_e , are connected with ke(0) (see also below).

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(re:	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$
Case 1. Total	7.5799	(Δ((w/r)/(w/r)		4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods	14.5143	0.0000	0.0000	#DIV/0!	5.8501	164.07	0.0061	0.0885	14.5143
F: consumption-goo	5.8064	0.0000	0.0000	#DIV/0!	3.9845	65.64	0.0152	0.0885	5.8064
							=α./	$(1-\alpha)=\alpha_x$	=k(0)
Case 2. Total	7.5799				4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods	11.6114	-0.2000	(0.3000)	-0.6666	5.8501	114.84	0.0087	0.1011	11.6114
F: consumption-goo	6.5488	0.1279	0.1918	-0.6666	3.9845	78.23	0.0128	0.0837	6.5488
Case 3. Total	7.5799				4.6691	91.66	0.0109	0.0827	7.5799
H: capital-goods	10.4345	-0.2811	(0.4297)	-0.6541	4.5920	93.57	0.0107	0.1115	10.4345
			(,				010101		
F: consumption-goo	6.4515	0.1111	0.3736	-0.2974	4.6995	90.16	0.0111	0.0716	6.4515
NT / XX/I /I //			a .		1.1	<i>c</i>		1 .1 1 //	

Note: When the effective labour is used, the current wage rate and the profit rate are connected with k(0). Rybczenski [1955] only holds under the condition of H-O.

9. Introduction of relative price level, $p = P_H/P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941] $r_F = r_F(0) = \Im r_F (\partial S_F - r_H(0)_{nominal} = p \cdot (\partial Y_H / \partial K_H), where <math>p = P_H/P_F$ we say $r_F = N_F (\partial S_H / \partial L_H)$

-r -r(·)		iai r (· - m·	10.7				ri(0)nonnia	$\mathbf{r} < -\mathbf{r}$	-10
	Marginal productivity	r r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	P_F	$p = P_H / P_F$	Changes (%)
Case 1.	Total	0.05094		4.3645					for r & w
	H: capital-goods	0.03566		5.8501		1		1	1.4286
	F: consumption-goo	ods	0.06071		3.9845		1		1.3764
Case 2.	Total	0.05094		4.3645					0.8390
	H: capital-goods	0.05094		5.8501		1		1.0000	0.8587
	F: consumption-goo	ods	0.05094		3.9845		1.0000		1.0000
Case 3.	Total	0.05094		4.6691					0.7849
	H: capital-goods	0.04908		4.5920		1.0000		1.0000	1.0000
	F: consumption-goo	ods	0.05213		4.6995		1.0000		1.1794

T7 Case 1 Country=	Uzav A(0)=k(0	va [1962] $1)^{1-\alpha}/\Omega(0)$								
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1850	1550	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.30072	0.6000	0.26487	0.04876	0.25195	4.3645
H: capita	l-goods	0.39	s=S/Y	0.30072	0.273	0.273		0.429		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	389.43	3828.24	95.55	41	136.50	1543.00	1679.50	793.65	698.10	3.5816
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	\mathbf{s}_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	W _{H(0)}
0.08127	2.27940	0.03566	9.8305	4.3127	0.47255	0.7000	0.44073	0.05689	0.41566	3.9622
F: consur	nption-go	oods	1-s	0.69928]					
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	905.57	5987.76	204.45	159.05	363.50	4109.00	4472.50	1056.35	851.90	4.2360
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s _H	S _{SΠ/Y}	s _{SH/Y}	W _{F(0)}
0.08127	1.33879	0.06071	6.6121	4.9389	0.23619	0.5624	0.19960	0.04571	0.19047	4.5375
Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.37552$									Ω	$H(0) > \Omega_{F(0)}$

1. Basic variables and parameters under convergence (delta=alpha)

			*			· ·			
	$g_Y *= g_K$	g_A^*	g_y	\varOmega^{*}	r	i	$\beta^{*}{}_{(\delta=\alpha)}$	п	α
Case 1. Total	0.1026	0.0867	0.0943	1.5956	0.0509	0.25033	0.6538	0.00755	0.08127
H: capital-goods	0.1242	0.1064	0.1158	2.2794	0.0357	0.38942	0.7269	0.00755	0.08127
F: consumption-goo	0.0911	0.0762	0.0829	1.3388	0.0607	0.19809	0.6155	0.00755	0.08127
Case 2. Total	0.1026	0.0867	0.0943	1.5956	0.0509	0.25033	0.6538	0.00755	0.08127
H: capital-goods	0.1178	0.0994	0.1095	1.8026	0.0509	0.31182	0.6812	0.00755	0.09182
F: consumption-goo	0.0961	0.0811	0.0879	1.5166	0.0509	0.22686	0.6425	0.00755	0.07725
Case 3. Total	0.1067	0.0895	0.0984	1.7840	0.0509	0.27988	0.6803	0.00755	0.09087
H: capital-goods	0.1373	0.1160	0.1288	2.0169	0.0491	0.39289	0.7047	0.00755	0.09899
F: consumption-goo	0.0885	0.0734	0.0803	1.6613	0.0521	0.22037	0.6670	0.00755	0.08660

2. Basic variables and parameters under the current situation (delta>alpha)

	F					(T		
	g Y(a)	g K(a)	g A(a)	g y(a)	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.0921	0.80119	-0.1474	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0289	0.0322	0.0901	0.92420	-0.1973	9.8305	4.3127
F: consumption-goo	0.0489	0.1019	0.0337	0.0410	0.0936	0.82598	-0.2105	6.6121	4.9389
For min capital-goo	ds growth	0.0509	-						
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.0921	0.80119	-0.1474	7.5799	4.7506
H: capital-goods	0.0400	0.4000	-0.0036	0.0322	0.0829	1.01128	-0.3301	7.8644	4.3628
F: consumption-goo	0.0487	0.1050	0.0337	0.0409	0.0967	0.84567	-0.2032	7.4576	4.9173
-			-						
Case 3. Total	0.0800	0.3000	0.0459	0.0718	0.0829	0.83870	-0.1584	7.5799	4.2489
H: capital-goods	0.0400	0.4000	-0.0064	0.0322	0.0796	1.01563	-0.3109	7.9758	3.9544
F: consumption-goo	0.0481	0.0955	0.0330	0.0403	0.0873	0.85018	-0.1831	7.3468	4.4223
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	α)n	delta=(n+	$\alpha(i-i\beta^*-n))$	$\overline{(i(1-\beta^*))}$	$3_{actual(\delta > \alpha)}$	_1-((1/i)(g/	$k(0)^{(\delta-1)}$	-α))	

 $g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad \text{delta} = (n + \alpha (1 - 1\beta^* - n))/(1(1 - \beta^*)) \beta_{actual(\delta > \alpha) =} 1 - ((1 / 1)(g_{A(a)}K(0))/(\delta - \alpha))$

Heckscher-Ohlin

3. Relat	ionships between o	$_{H}$ +(a_{KF} , y_{F}) L_{F}	$K = a_{KH} Y_{H} + a_{KF} Y_{F}$						
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			\mathbf{y}_{H}	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} .y _{H)} L	$_{I}+(a_{LF},y_{F})L_{F}$	$L=a_{LH}Y_{H}+a_{L}$	_F .Y _F
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	УF	$\boldsymbol{a_{LF}}{=}1/y_F$	$L_H \& L_F$	$Y_H \& Y_F$	K=K _H +K _F L	$=L_H+L_F$
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	2.2794		4.3127	0.23187	389.43	1679.50	3828	389
	F: consumption-goo	ods	1.3388	4.9389	0.20248	905.57	4472.50	5988	906
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.8026		4.3628	0.22921	389.43	1699.00	3063	389
	F: consumption-goo	ods	1.5166	4.9173	0.20336	905.57	4453.00	6753	906
Case 3.	Total	1.7840		4.2489	0.23536	1295	5502	9816	1295
	H: capital-goods	2.0169		3.9544	0.25288	479.98	1898.05	3828	480
	F: consumption-goo	ods	1.6613	4.4223	0.22613	815.02	3604.25	5988	815

T7 Case 2	. K decre	ases in cap	ital-goods	by 20%				1	Uzawa [196	2]:Ω _H >Ω _F
Country=	capital-g	oods+con	sumption-	goods: T	=H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$))^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1850	1550	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.30072	0.6000	0.26487	0.04876	0.25195	4.3645
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	0.01162		
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)
0.00755	389.43	3062.59	109.21	47	156.01	1543.00	1699.00	634.92	525.71	3.6102
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	\mathbf{s}_{H}	S _{SII/Y}	S _{SH/Y}	$W_{H(0)}$
0.09182	1.80258	0.05094	7.8644	4.3628	0.37370	0.7000	0.33068	0.06428	0.30942	3.9622
F: consur	nption-gb	loidsg goal:	seek, where	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	-0.00436		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)
0.00755	905.57	6753.41	190.79	153.20	343.99	4109.00	4453.00	1215.08	1024.29	4.2104
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	\mathbf{s}_{H}	S _{STI/Y}	s _{SH/Y}	W _{F(0)}
0.07725	1.51660	0.05094	7.4576	4.9173	0.27287	0.5546	0.24032	0.04285	0.23002	4.5375
							$Y_{H(0)}\!/Y_{F(0)}$	0.38154		

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The renrose cu	K The remove curve, B_K , and the assets valuation ratio, V										
	Ω^*	I/K	g _K *	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$		
Case 1. Total	1.5956	0.1569	0.1026	1.5294	0.0509	0.0333	1.5294	1.0000	1.5294		
H: capital-goods	2.2794	0.1708	0.1242	1.3757	0.0357	0.0259	1.3757	1.0000	1.3757		
F: consumption-goo	1.3388	0.1480	0.0911	1.6247	0.0607	0.0374	1.6247	1.0000	1.6247		
Case 2. Total	1.5956	0.1569	0.1026	1.5294	0.0509	0.0333	1.5294	1.0000	1.5294		
H: capital-goods	1.8026	0.1730	0.1255	1.3779	0.0509	0.0370	1.3779	1.0000	1.4680		
F: consumption-goo	1.5166	0.1496	0.0907	1.6491	0.0509	0.0309	1.6491	1.0000	1.5565		
Case 3. Total	1.7840	0.1569	0.1036	1.5146	0.0570	0.0376	1.5146	1.0000	1.4700		
H: capital-goods	2.0169	0.1948	0.1265	1.5402	0.0491	0.0319	1.5402	1.0000	1.4190		
F: consumption-goo	1.6613	0.1326	0.0916	1.4487	0.0521	0.0360	1.4487	1.0000	1.4991		

5. The relative pr	ice level:	real vs. 1	ıominal	(a)	Inf. or def	(b)	(c)		
	r(0)	r=∂Yt/∂Kt	P _Y =r(0)/r real	r _{M(0)} given	p _Y =r _{M(0)} /r rea	M_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0333	0.9909	0.0303	1.0899
H: capital-goods	0.03566	0.03566	1.0000	0.0330	0.9255	0.0259	1.2732	0.0236	1.4001
F: consumption-goo	0.06071	0.06071	1.0000	0.0330	0.5436	0.0374	0.8831	0.0340	0.9718
Case 2. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0333	0.9909	0.0303	1.0899
H: capital-goods	0.05094	0.05094	1.0000	0.0330	0.6478	0.0347	0.9510	0.0336	0.9820
F: consumption-goo	0.05094	0.05094	1.0000	0.0330	0.6479	0.0327	1.0084	0.0281	1.1755
Case 3. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0387	0.8518	0.0342	0.9654
H: capital-goods	0.04908	0.04908	1.0000	0.0330	0.6724	0.0346	0.9541	0.0290	1.1389
F: consumption-goo	0.05213	0.05213	1.0000	0.0330	0.6331	0.0348	0.9491	0.0327	1.0091
37. 70.1 1 1	1 0 .				4.4 4 .4				1.0

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. <u>r(real)</u>= $\partial Y t_{\partial} K t^{\alpha_0-1} L t^{1-\alpha}$ and w(real)= $\partial Y t_{\partial} L t^{-(1-\alpha)} A t K^{\alpha} L t^{\alpha}$

6. Relat	ionships between p	rice levels: r _H & w _H for	P _H and r _F &	w _F for P _F	Rybczynski
For H,	$P_H = a_{KH} r_H + a_{LH} w_H$	When real=nominal, the price lev	el is 1.0.	The elasticity of su	bstitution is 1.0.

						•			
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	r_H	r_F	w_H	W_F	P_{H}	$P_F p$	$=P_H/P_F$	
Case 1.	Total	0.05094		4.3645		1.0000		1.0000	
	H: capital-goods	0.03566		3.9622		1		1	
	F: consumption-goo	ds	0.06071		4.5375		1		
Case 2.	Total	0.05094		4.3645		1.0000		1.0000	
	H: capital-goods	0.05094		3.9622		1		1	
	F: consumption-goo	ds	0.05094		4.5375		1		
Case 3.	Total	0.05094		3.8628		1.0000		1.0000	
	H: capital-goods	0.04908		3.5630		1		1	
	F: consumption-goo	ds	0.05213		4.0393		1		

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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							11/(0)/0/(0)	0.10561		
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	<i>v</i> 1		1			W(0)				, , ,
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$										
$ \begin{array}{c} 0.09087 & 1.78398 & 0.05094 & 7.5799 & 4.2489 & 0.33622 & 0.600 & 0.2979 & 0.05452 & 0.28170 & 3.8628 \\ \text{H: capital-goods} & & & & & & & & & & & & & & & & & & &$										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	· · ·		· · ·							
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		0.05094	7.5799	4.2489	0.33622	0.6000			0.28170	3.8028
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		77 (0)	G (0)	B (0)	T (0)	11/(0)			G (0)	
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$\begin{array}{c c c c c c c c c c c c c c c c c c c $					0.47379	0.7000			0.40450	3.5630
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										
α Ω _F (0) r _{Fr0} k(0) y(0) s s _H s _{HT} s _{HT} s _{HT} w _{Fr0} 0.08660 1.66131 0.05213 7.3468 4.4223 0.26378 0.5398 0.22767 0.04675 0.21703 4.0393 Visual problem of the constant										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		5987.76				3292.13	3604.25	950.72	782.23	3.7209
$\overline{Y_{H00}/Y_{F00}}$ $O_{H(0)}>\Omega_{P(0)}$ Using goal seek, where w ₁ approaches w=w ₁ r.e. w βp^{-1} $P(x)^{-1} \beta^{-1} p^{-1}$ $P(x)^{-1} \beta^{-1} p^{-1} p^{-1$				• • • •						w _{F(0)}
Using goal seek, where $w_{\rm F}$ approaches $w_{\rm With}$ 7. The neutrality of financial asets and the coefficient $x=r/\nu$ 7. Case 1. Total 0.0303 0.0333 1.5294 1.09992 0.0885 0.0117 1.6629 0.0322 0.2194 H: capital-goods 0.0336 0.0337 1.6247 1.10043 0.0885 0.0134 1.3738 0.0644 0.2078 goal seek goal seek	0.08660 1.66131	0.05213	7.3468	4.4223	0.26378	0.5398	0.22767		0.21703	4.0393
7. The neutrality of financial assets and the coeffcient $x=r/\nu$ ke*= $\Omega^* (1/(1-\alpha))$ x, */x_0=k(0/ke* r_CB_pointset r_u* at β^* r^* r_u r_u* c_ur_u*r_u* $a_u at (\lambda^* - \alpha_u A_u^* - \alpha_u^* - \alpha_u$							$Y_{H(0)}/Y_{F(0)}$	0.52661	Ω	$H(0) > \Omega_{F(0)}$
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$						Usi	ng goal see	k, where w	F approach	nes w=w _H
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	7. The neutrality	of financ	ial assets	and the	coeffcient	t <i>x=r/w</i>	ke*=Ω ³	$*^{(1/(1-\alpha))}$	x.*/x	_=k(0)/ke*
$\begin{array}{c c c c c c c c c c c c c c c c c c c $									-	
H: capital-goods 0.0236 0.0259 1.3757 1.09965 0.0885 0.0090 2.4517 0.0361 0.2494 F: consumption-goo 0.0340 0.0374 1.6247 1.10943 0.0885 0.0134 1.3738 0.0644 0.2078 Case 2. Total 0.0303 0.0333 1.5294 1.09993 0.0885 0.0117 1.6629 0.0532 0.2194 H: capital-goods 0.0342 0.0327 1.6491 1.10005 0.1011 0.0112 1.912 0.0528 0.2129 F: consumption-goo 0.0342 0.0347 1.5146 1.10001 0.1000 0.0111 2.1785 0.0504 0.2199 F: consumption-goo 0.0327 0.0348 1.4487 1.10018 0.0948 0.0120 1.7432 0.0544 0.2199 F: consumption-goo 0.0327 0.0346 1.5440 1.0018 0.0948 0.0120 1.7432 0.0544 0.2199 F: consumption-goo 0.0327 0.0348 1.4487 1.10018 0.0948 0.0120 1.7432 0.0544 0.2144	Case 1 Total									
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$ \begin{array}{c c c c c c c c c c c c c c c c c c c $										
$\begin{array}{c} \mbox{Case 2. Total} & 0.0303 & 0.0333 & 1.5294 & 1.09993 \\ \mbox{H: capital-goods} & 0.0336 & 0.0347 & 1.3779 & 1.10005 \\ \mbox{F: consumption-goo} & 0.0281 & 0.0327 & 1.6491 & 1.10027 \\ \mbox{H: capital-goods} & 0.0342 & 0.0387 & 1.5146 & 1.10001 \\ \mbox{H: capital-goods} & 0.0290 & 0.0346 & 1.5402 & 1.09974 \\ \mbox{H: capital-goods} & 0.0290 & 0.0346 & 1.5402 & 1.09974 \\ \mbox{H: capital-goods} & 0.0290 & 0.0346 & 1.5402 & 1.09974 \\ \mbox{F: consumption-goo} & 0.0327 & 0.0348 & 1.4487 & 1.10018 & 0.0948 & 0.0120 & 1.7432 & 0.0544 & 0.2214 \\ \mbox{Note: When the effective labour is used, the coefficient, x_0 and x_e, are connected with ke(0) (see also below). \\ \mbox{8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox \\ \mbox{p=P}_M/P_F^{=1} & k(0) & \Delta k/k(0) & sigma \\ \mbox{w(0)=w(re: w(0)/r(0) r(0)/w(0)} & k/(w/r) & \alpha_x(w/r) \\ \mbox{Case 1. Total} & 7.5799 & (\Delta (w/r))/(w/r) \\ \mbox{H: capital-goods} & 9.8305 & 0.0000 & 0.0000 & \#DIV/0! \\ \mbox{H: capital-goods} & 7.8644 & -0.2000 & (0.3000) & -0.6666 \\ \mbox{J} 9.622 & 77.78 & 0.0129 & 0.1011 & 7.8644 \\ \mbox{F: consumption-goo} & 7.4576 & 0.1279 & 0.1918 & -0.6666 \\ \mbox{J} 4.5375 & 89.08 & 0.0112 & 0.0885 & 7.5799 \\ \mbox{H: capital-goods} & 7.8644 & -0.2000 & (0.3000) & -0.6666 \\ \mbox{J} 4.5375 & 89.08 & 0.0112 & 0.0837 & 7.4576 \\ \mbox{Case 3. Total} & 7.5799 & 3.8628 & 75.83 & 0.0132 & 0.1000 & 7.5799 \\ \mbox{H: capital-goods} & 7.9758 & -0.1887 & (0.3467) & -0.5442 & 3.5630 & 72.660 & 0.0138 & 0.1099 & 7.9758 \\ \mbox{F: consumption-goo} & 7.4576 & 0.1279 & 0.1918 & -0.6666 \\ \mbox{J} 7.5799 & 3.8628 & 75.83 & 0.0132 & 0.1000 & 7.5799 \\ \mbox{H: capital-goods} & 7.9758 & -0.1887 & (0.3467) & -0.5442 & 3.5630 & 72.660 & 0.0138 & 0.1099 & 7.9758 \\ \mbox{F: when the effective labour is used, the current wage rate and the profit rate are connected with k(0). \\ \mbox{Rybczenski [1955] only holds under the condition of H-O. \\ \mbox{J} Marginal productivit r_{H(marg,Pro)} r_{F(marg,Pro)} \\ H: capital-$	1. consumption-go			1.0247				1.5750	0.0011	0.2070
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 2 Total			1 5294				1 6629	0.0532	0.2194
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $							0.0119			
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1 1									
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 3 Total	0.0342	0.0387	1.5146	1.10001	0.1000	0.0117	1.8902	0.0529	0.2207
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										
Note: When the effective labour is used, the coefficient, x_0 and x_e , are connected with $ke(0)$ (see also below). 8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox $p=P_M/P_F^{-1}$ k(0) $\Delta k/k(0)$ $signa$ w(0)=w(re: w(0)/r(0) (0) $k/(w/r)$ $\alpha_x(w/r)$ Case 1. Total 7.5799 ($\Delta (w/r)/w(r)$ 4.3645 85.68 0.0117 0.0885 7.5799 H: capital-goods 9.8305 0.0000 0.0000 #DIV/0! 4.5375 74.74 0.0134 0.0885 6.6121 $=\alpha/(1-\alpha)=\alpha_x$ = k(0) Case 2. Total 7.5799 ($\Delta (w/r)/w(r)$ 4.3645 85.68 0.0117 0.0885 7.5799 H: capital-goods 7.8644 -0.2000 (0.3000) -0.6666 3.9622 77.78 0.0129 0.1011 7.8644 F: consumption-goo 7.4576 0.1279 0.1918 -0.6666 4.5375 89.08 0.0112 0.0885 7.5799 H: capital-goods 7.9758 -0.1887 (0.3467) -0.5442 3.5630 72.60 0.0138 0.1099 7.9758 F: consumption-goo 7.3468 0.1111 0.0368 -3.0222 4.0393 77.49 0.0129 0.0948 7.3468 Note: When the effective labour is used, the current wage rate and the profit rate are connected with $k(0)$. Rybczenski [1955] only holds under the condition of H-O. 9. Introduction of relative price level, $p=P_H/P_F$; Duality [Jones, R. W., 1965] S-samuelson [1941] $r_F=r_f(0)=\Theta r_F/\Theta r_F r_H(0)_{nominal}=p(\Phi r_H/\Theta r_F)^{-1}P_H/P_F$; Duality [Jones, R. W., 1965] S-samuelson [1941] $r_F=r_f(0)=\Theta r_F/\Theta r_F r_H(0)_{nominal}=p(\Phi r_H/\Theta r_F)^{-1}P_H/P_F$; Duality [Jones, R. W., 1965] S-samuelson [1941] $r_F=r_consumption-goods 0.05094 4.5375 1 1 1.3764 Case 2. Total 0.05094 4.5375 1 0.000 0.8587 r_{1} capital-goods 0.05094 4.5375 1 0.0000 0.8587r_{1} capital-goods 0.05094 4.5375 1 0.0000r_{1} capital-goods 0.05094 4.5375 0.0000 0.8587r_{1} capital-goods 0.05094 4.5375 1 0.0000r_{1} capital-goods 0.05094 4.5375 1 0.0000r_{2} capital-goods 0.05094 1.00000r_{2} capital-goods 0.05094 1.00000r_{2} capital-goods 0.05094 1.00000r_{$										
8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox p= $_{M}/P_{F}$ =1 k(0) sigma w(0)=w(re: w(0)/r(0) r(0)/w(0) k(w(r) cas(w(r) Case 1. Total 7.5799 (Δ(w/r)/(w/r) 4.3645 85.68 0.0117 0.0885 7.5799 Econsumption-goo 6.6121 0.0000 0.0000 #4.3645 85.68 0.0117 0.0885 7.5799 Econsumption-goo 7.4576 0.1279 0.13000 -0.000 4.3645 85.068 0.0112 0.0885 7.5799 Econsumption-goo 7.4576 0.1279 0.13862 75.83 0.0132 0.1000 7.5799 K: consumption-goo 7.4576 0.1279 3.8628 75.83 0.0132 0.1000 7.5799			ur is used,	the coeffic	ient, x_0 ar	dx_{e} , are	connected	with ke (0)	(see also b	elow).
$\begin{array}{c c c c c c c c c c c c c c c c c c c $										
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$										
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$	·		w(0)=w(re	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_{\rm v}({\rm w/r})$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$			<u> </u>	-						
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total	7.5799	(Δ	(w/r)/(w/r)	sigma	4.3645	85.68	0.0117	0.0885	7.5799
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Case 1. Total H: capital-goods	7.5799 9.8305	(<u>(</u> 0.0000	(w/r)/(w/r) 0.0000	sigma #DIV/0!	4.3645 3.9622	85.68 111.12	0.0117 0.0090	0.0885 0.0885	7.5799 9.8305
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods	7.5799 9.8305	(<u>(</u> 0.0000	(w/r)/(w/r) 0.0000	sigma #DIV/0!	4.3645 3.9622	85.68 111.12	0.0117 0.0090 0.0134	0.0885 0.0885 0.0885	7.5799 9.8305 6.6121
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Case 1. Total H: capital-goods F: consumption-go	7.5799 9.8305 0 6.6121	(<u>(</u> 0.0000	(w/r)/(w/r) 0.0000	sigma #DIV/0!	4.3645 3.9622 4.5375	85.68 111.12 74.74	$\begin{array}{r} 0.0117 \\ 0.0090 \\ 0.0134 \\ = \alpha \end{array}$	0.0885 0.0885 0.0885 $/(1-\alpha)=\alpha_x$	7.5799 9.8305 6.6121 =k(0)
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods F: consumption-go Case 2. Total	7.5799 9.8305 0 6.6121 7.5799	(Δ(0.0000 0.0000	(w/r)/(w/r) 0.0000 0.0000	sigma #DIV/0! #DIV/0!	4.3645 3.9622 4.5375 4.3645	85.68 111.12 74.74 85.68	$\begin{array}{r} 0.0117\\ 0.0090\\ 0.0134\\ = \alpha\\ 0.0117\end{array}$	0.0885 0.0885 0.0885 $/(1-\alpha)=\alpha_x$ 0.0885	7.5799 9.8305 6.6121 =k(0) 7.5799
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods	7.5799 9.8305 0 6.6121 7.5799 7.8644	(Δ(0.0000 0.0000 -0.2000	(w/r)/(w/r) 0.0000 0.0000 (0.3000)	sigma #DIV/0! #DIV/0! -0.6666	4.3645 3.9622 4.5375 4.3645 3.9622	85.68 111.12 74.74 85.68 77.78	$\begin{array}{r} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ /(1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods	7.5799 9.8305 0 6.6121 7.5799 7.8644	(Δ(0.0000 0.0000 -0.2000	(w/r)/(w/r) 0.0000 0.0000 (0.3000)	sigma #DIV/0! #DIV/0! -0.6666	4.3645 3.9622 4.5375 4.3645 3.9622	85.68 111.12 74.74 85.68 77.78	$\begin{array}{r} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ /(1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576	(Δ(0.0000 0.0000 -0.2000	(w/r)/(w/r) 0.0000 0.0000 (0.3000)	sigma #DIV/0! #DIV/0! -0.6666	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375	85.68 111.12 74.74 85.68 77.78 89.08	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ = \alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ /(1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576
Note: When the effective labour is used, the current wage rate and the profit rate are connected with $k(0)$. Rybczenski [1955] only holds under the condition of H-O. 9. Introduction of relative price level, $p = P_H/P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941] $r_F=r_F(0)=\Im r_F(\Im F_F r_H(0)_{nominal}=p^{-}(\Im Y_H/\Im F_H)$, where $p=P_H/P_F$ $w_F=w_F(0)=\Im Y_F/\Im F_F$ $w_{H(0)nominal}=p^{-}(\Im Y_H/\Im F_H)$ Marginal productivity $r_{H(morg)PO_A}$ $r_{H(morg)PO_A}$ P_H P_F $p=P_H/P_F$ hanges (%) Case 1. Total 0.05094 4.3645 1.4286 F: consumption-goods 0.06071 4.5375 1.0000 0.8587 F: consumption-goods 0.05094 3.9622 1.0000 0.8587 F: consumption-goods 0.05094 0.3562 0.8390 H: capital-goods 0.05094 3.8628 0.8390 H: capital-goods 0.05094 3.8628 0.05094 0.8390 H: capital-goods 0.05094 0.5094 0.5375 0.0000 0.8587 F: consumption-goods 0.05094 0.5094 0.5375 0.0000 0.8587 H: capital-goods 0.04908 0.5630 1.0000 0.0000 0.8992	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799	(Δ(0.0000 0.0000 -0.2000 0.1279	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918	sigma #DIV/0! #DIV/0! -0.6666 -0.6666	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375 3.8628	85.68 111.12 74.74 85.68 77.78 89.08 75.83	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\0885\\0885\\0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods	7.5799 9.8305 0.6.6121 7.5799 7.8644 0.7.4576 7.5799 7.9758	(Δ(0.0000 0.0000 -0.2000 0.1279 -0.1887	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467)	sigma #DIV/0! #DIV/0! -0.6666 -0.6666 -0.5442	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375 3.8628 3.5630	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60	$\begin{array}{r} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\0885\\0885\\0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758
	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go	7.5799 9.8305 0.6.6121 7.5799 7.8644 0.7.4576 7.5799 7.9758 0.7.3468	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368	sigma #DIV/0! #DIV/0! -0.6666 -0.6666 -0.5442 -3.0222	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375 3.8628 3.5630 4.0393	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948 \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.9758 0 7.3468 ective labor	(Δ(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ur is used, i	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current	sigma #DIV/0! #DIV/0! -0.66666 -0.66666 -0.5442 -3.0222 wage rate	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375 3.8628 3.5630 4.0393	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948 \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eft Rybczenski [1955	7.5799 9.8305 0.6.121 7.5799 7.8644 0.7.4576 7.5799 7.9758 0.7.3468 ective labor only holds	(A) 0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ur is used, i s under the	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition	sigma #DIV/0! #DIV/0! -0.6666 -0.6666 -0.5442 -3.0222 wage rate n of H-O.	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375 3.8628 3.5630 4.0393 and the pr	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ e \text{ connecte} \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k(0) \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468).
	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff Rybczenski [1955 9. Introduction	7.5799 9.8305 0.6.6121 7.5799 7.8644 0.7.4576 7.5799 7.9758 0.7.3468 0.7.3468 0.7.3468 0.7.3468 0.7.9468 0.7.9468 0.7.9468 0.7.9468 0.7.975799 0.7.9758 0.7.	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, s under the price lev	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el , <i>p</i> = <i>P</i> _H	sigma #DIV/0! #DIV/0! -0.6666 -0.6666 -0.5442 -3.0222 wage rate n of H-O. /P _F : Du	4.3645 3.9622 4.5375 4.3645 3.9622 4.5375 3.8628 3.5630 4.0393 and the pr ality [Jor	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ e \text{ connecte}\\ \textbf{., 1965]} \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k(0\\ \textbf{S-Samuels})\end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468).
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff Rybczenski [1955 9. Introduction $r_F=r_F(0)=\Im Y_F/\Im K_F$	7.5799 9.8305 0. 6.6121 7.5799 7.8644 0. 7.4576 7.5799 7.9758 0. 7.3468 0. 7.3468 0. 7.3468 0. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, s under the price lev price lev j = p (⊙ Y _H /e	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ K _H), when	sigma #DIV/0! #DIV/0! -0.6666 -0.6666 -0.5442 -3.0222 wage rate n of H-O. / <i>P_F</i> : Du e p=P _H /P _F	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ \textbf{ality} [Jon\\ w_F=w_F(0)\end{array}$	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar nes, R. W ⊫∂Y _F /∂L _F	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0112\\ 0.0129\\ 0.0112\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{., 1965]}\\ WH(0) nomina\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k(0\\ \textbf{S-Samuel:}\\ \textbf{s-Samuel:}\\ \textbf{s-Samuel:}\\ \textbf{s-Samuel:} \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468). son [1941] L _H)
F: consumption-goods 0.06071 4.5375 1 1.3764 Case 2. Total 0.05094 4.3645 0.8390 0.8390 H: capital-goods 0.05094 3.9622 1 1.0000 0.8587 F: consumption-goods 0.05094 4.5375 1.0000 0.8587 Gase 3. Total 0.05094 3.8628 0.8902 1.0000 H: capital-goods 0.04908 3.5630 1.0000 1.0000 1.0000	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the cff Rybczenski [1955 9. Introduction $r_F=r_F(0)=\Im Y_F/\Im K_F$ Marginal	7.5799 9.8305 0. 6.6121 7.5799 7.8644 0. 7.4576 7.5799 7.9758 0. 7.3468 0. 7.3468 0. 7.3468 0. 7.3468 0. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, s under the price lev µ= p (⊙ Y _H /€ <i>r</i> H(marg pro.)	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ K _H), when	$\frac{sigma}{\#DIV/0!} = \frac{1}{4} \frac{1}{2} $	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ \textbf{ality} [Jon\\ w_F=w_F(0)\end{array}$	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar nes, R. W ⊫∂Y _F /∂L _F	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0112\\ 0.0129\\ 0.0112\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{., 1965]}\\ WH(0) nomina\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuele}\\ = \mathbf{p} (\ominus \mathbf{Y}_{\mathbf{H}}/\partial)\\ p = p_{_{B}}/p_{_{F}} \begin{bmatrix} \mathbf{e} \\ \mathbf{F} \end{bmatrix}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5758 7.3468). son [1941] L _H) Thanges (%)
Case 2. Total 0.05094 4.3645 0.8390 H: capital-goods 0.05094 3.9622 1 1.0000 0.8387 F: consumption-goods 0.05094 4.5375 1.0000 0.8390 Case 3. Total 0.05094 3.8628 0.8992 H: capital-goods 0.04908 3.5630 1.0000 1.0000	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the cff Rybczenski [1955 9. Introduction $r_F=r_F(0)=\Im Y_F/\Im K_F$ Marginal	7.5799 9.8305 0. 6.6121 7.5799 7.8644 0. 7.4576 7.5799 7.9758 0. 7.3468 0. 7.3468 0. 7.3468 0. 7.3468 0. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, s under the price lev µ= p (⊙ Y _H /€ <i>r</i> H(marg pro.)	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ K _H), when	$\frac{sigma}{\#DIV/0!} \\ \frac{\#DIV/0!}{\#DIV/0!} \\ \frac{-0.6666}{-0.6666} \\ \frac{-0.5442}{-3.0222} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{-3.0222} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{-3.0222} \\ \frac{-0.542}{-3.0222} \\ \frac{-0.542}{-3.022} \\ \frac{-0.542}{-3.$	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ \textbf{ality} [Jon\\ w_F=w_F(0)\end{array}$	$\begin{array}{c c} 85.68\\ 111.12\\ 74.74\\ 85.68\\ 77.78\\ 89.08\\ 75.83\\ 72.60\\ 77.49\\ rofit rate ar\\ res, R. W\\ reof rate ar\\ res, R. W\\ P_H \\ P_H \end{array}$	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0112\\ 0.0129\\ 0.0112\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{., 1965]}\\ WH(0) nomina\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuele}\\ = \mathbf{p} (\ominus \mathbf{Y}_{\mathbf{H}}/\partial)\\ p = p_{_{B}}/p_{_{F}} \begin{bmatrix} \mathbf{e} \\ \mathbf{F} \end{bmatrix}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468). son [1941] L _H) :hanges (%) for r & w
H: capital-goods 0.05094 3.9622 1 1.0000 0.8587 F: consumption-goods 0.05094 4.5375 1.0000 1.0000 1.0000 Case 3. Total 0.05094 3.8628 0.8992 0.8992 H: capital-goods 0.04908 3.5630 1.0000 1.0000 1.0000	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the cfl Rybczenski [1955 9. Introduction of $r_F=r_F(0)=\partial Y_F/\partial K_F$ Marginal Case 1. Total H: capital-goods Data State	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.9758 0 7.3468 cettive labou 0 only holds 0 fl relative r _H (0) _{nominin} productivity ul-goods	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, s under the price lev . <i>p</i> rice lev . <i>rH</i> (<i>marg</i> , <i>pros</i>) 0.05094 0.03566	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ $_{0K_H}$, when r F(margi Pro.)	$\frac{sigma}{\#DIV/0!} \\ \frac{\#DIV/0!}{\#DIV/0!} \\ \frac{-0.6666}{-0.6666} \\ \frac{-0.5442}{-3.0222} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{-3.0222} \\ \frac{-0.5442}{wage rate} \\ \frac{-0.5442}{-3.0222} \\ \frac{-0.542}{-3.0222} \\ \frac{-0.542}{-3.022} \\ \frac{-0.542}{-3.$	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the pr\\ ality [Jot\\ w_F=w_F(0)\\ w_F(margi,pro. w_F(0))\\ w_F(margi$	$\begin{array}{c c} 85.68\\ 111.12\\ 74.74\\ 85.68\\ 77.78\\ 89.08\\ 75.83\\ 72.60\\ 77.49\\ rofit rate ar\\ res, R. W\\ reof rate ar\\ res, R. W\\ P_H \\ P_H \end{array}$	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0112\\ 0.0129\\ 0.0112\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{., 1965]}\\ WH(0) nomina\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \ with \ k \ (0\\ \textbf{S-Samuelt}\\ \textbf{s-samuelt}\\ \textbf{p} = p \cdot (\forall \textbf{Y}_{\textbf{H}} / \texttt{a})\\ p = P_{II} / P_{F} \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468). son [1941] L _H) :hanges (%) for r & w 1.4286
F: consumption-goods 0.05094 4.5375 1.0000 1.0000 Case 3. Total 0.05094 3.8628 0.8992 0.8992 H: capital-goods 0.04908 3.5630 1.0000 1.0000 1.0000	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff Rybczenski [1955 9. Introduction $r_F=r_F(0)=\Im Y_F/\Im K_F$ Marginal Case 1. Total H: capita F: consum	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.9758 0 7.3468 cettive labou 0 only holds 0 fl relative r _H (0) _{nominin} productivity ul-goods	(A) 0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 or is used; i under th price lev: $_{ii}$ =p:($\Theta Y_{H}/e$ 0.03566 ds	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ $_{0K_H}$, when r F(margi Pro.)	sigma #DIV/0! #DIV/0! =0.6666 -0.6666 -0.6666 -0.6666 -0.6666 -0.6666 -0.6666 -0.6742 -3.0222 wage rate n of H-O. //P _F : Du e p=P _H /P _F -0.43645 3.9622	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the pr\\ ality [Jot\\ w_F=w_F(0)\\ w_F(margi,pro. w_F(0))\\ w_F(margi$	$\begin{array}{c c} 85.68\\ 111.12\\ 74.74\\ 85.68\\ 77.78\\ 89.08\\ 75.83\\ 72.60\\ 77.49\\ rofit rate ar\\ res, R. W\\ reof rate ar\\ res, R. W\\ P_H \\ P_H \end{array}$	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0112\\ 0.0129\\ 0.0112\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{., 1965]}\\ WH(0) nomina\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \ with \ k \ (0\\ \textbf{S-Samuelt}\\ \textbf{s-samuelt}\\ \textbf{p} = p \cdot (\forall \textbf{Y}_{\textbf{H}} / \texttt{a})\\ p = P_{II} / P_{F} \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468). son [1941] L _H) Thanges (%) for r & w 1.4286
Case 3. Total 0.05094 3.8628 0.8992 H: capital-goods 0.04908 3.5630 1.0000 1.0000	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff Rybczenski [1955 9. Introduction $r_F=r_F(0)=\Im Y_F/\Im K_F$ Marginal Case 1. Total H: capit F: consum Case 2. Total	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.9758 0 7.3468 cective labou 0 only holds of relative r _H (0) _{nomina} productivity ul-goods	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ur is used, s under th price lev u [−] price lev u [−] price lev u [−] price lev 0.05094 0.03566 ds 0.05094	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ $_{0K_H}$, when r F(margi Pro.)	$\begin{array}{c} sigma \\ \# DIV/0! \\ \# DIV/0! \\ \# DIV/0! \\ \# DIV/0! \\ -0.6666 \\ -0.6666 \\ -0.5442 \\ -3.0222 \\ wage rate \\ n of H-O. \\ /P_{F} = Du \\ \psi Homega rate \\ 3.0622 \\ 4.3645 \\ 4.3645 \end{array}$	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the pr\\ ality [Jot\\ w_F=w_F(0)\\ w_F(margi,pro. w_F(0))\\ w_F(margi$	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar res, R. W $= \Im Y_F / \partial L_F$ P_H 1	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0112\\ 0.0129\\ 0.0112\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{., 1965]}\\ WH(0) nomina\\ \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.08837\\ 0.08837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuel:}\\ = \textbf{P} \cdot (\ominus \textbf{Y}_{\textbf{H}}/ \circ)\\ p = P_{H}/P_{F}\\ 1\\ 1\\ \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.3468). son [1941] L _H) thanges (%) for r & w 1.4286 1.3764 0.8390
H: capital-goods 0.04908 3.5630 1.0000 1.0000 1.0000	$\begin{array}{llllllllllllllllllllllllllllllllllll$	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.3648 0 7.4576 7.5799 7.3748 0 7.3468 cective labot 0 only holds of relative r _H (0) _{nomina} oroductivity ul-goods	(A(0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, s under the price lev , $a_i=p\cdot(aY_H/a_i)$ 0.05094 0.05094	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ K_H), when $^{P}F(margl Pro)$	$\begin{array}{c} sigma \\ \# DIV/0! \\ \# DIV/0! \\ \# DIV/0! \\ \# DIV/0! \\ -0.6666 \\ -0.6666 \\ -0.5442 \\ -3.0222 \\ wage rate \\ n of H-O. \\ /P_{F} = Du \\ \psi Homega rate \\ 3.0622 \\ 4.3645 \\ 4.3645 \end{array}$	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ and the y\\ IJon\\ W_F=W_F(0)\\ W_{F(matgipro.}\\ 4.5375\\ \end{array}$	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar res, R. W $= \Im Y_F / \partial L_F$ P_H 1	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ e \ connecte\\ \textbf{, 1965]}\\ W_{H(0)nomina}\\ P_F\\ 1\end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.08837\\ 0.08837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuel:}\\ = \textbf{P} \cdot (\ominus \textbf{Y}_{\textbf{H}}/ \circ)\\ p = P_{H}/P_{F}\\ 1\\ 1\\ \end{array}$	$\begin{array}{c} 7.5799\\ 9.8305\\ 6.6121\\ = k(0)\\ 7.5799\\ 7.8644\\ 7.4576\\ 7.3468\\ 7.3468\\ 7.3468\\ 1.3764\\\\ \text{son [1941]}\\ L_{\text{H}})\\\\ \text{son [1941]}\\ L_{\text{H}})\\\\ \text{son [1941]}\\ 0.8390\\ 0.8587\\\\\\ 0.8587\\\\\\\\\\\\\\\\ .$
	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Not: When the eft Rybczenski [1955 9. Introduction of $r_F = T_F(0) = \Im Y_F / \Im K_F$ Marginal Case 1. Total H: capital- E: consumption-go Case 2. Total H: capital- H: capital-	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.3648 0 7.4576 7.5799 7.3748 0 7.3468 cective labot 0 only holds of relative r _H (0) _{nomina} oroductivity ul-goods	(A(0.0000 0.0000 0.0000 -0.2000 0.1279 -0.1887 0.1111 ar is used, is under the price lev - <i>i</i> = p (⊙ Y _H /e 0.03566 ds 0.05094 0.05094 ds	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ K_H), when $^{P}F(margl Pro)$	$\frac{sigma}{\#DIV/0!}$ #DIV/0! #DIV/0! -0.6666 -0.6666 -0.6666 -0.5442 -3.0222 wage rate n of H-O. //P _F : Du e p=P _H /P _F Withourgi.Pro. 4.3645 3.9622 4.3645	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ and the y\\ IJon\\ W_F=W_F(0)\\ W_{F(matgipro.}\\ 4.5375\\ \end{array}$	85.68 111.12 74.74 85.68 77.78 89.08 75.83 72.60 77.49 rofit rate ar res, R. W $= \Im Y_F / \partial L_F$ P_H 1	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ e \text{ connecte}\\ \textbf{, 1965]}\\ W_{H(0)\text{nomina}}\\ P_{F}\\ 1\end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.08837\\ 0.08837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuel:}\\ = \textbf{P} \cdot (\ominus \textbf{Y}_{\textbf{H}}/ \circ)\\ p = P_{H}/P_{F}\\ 1\\ 1\\ \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.9758 7.3468). son [1941] L _H) thanges (%) for r & W 1.4286 1.3764 0.8390 0.85370
F: consumption-goods 0.05213 4.0393 1.0000 0.8902	$\begin{array}{l} \hline Case \ 1. Total \\ H: capital-goods \\ F: consumption-go \\ Case \ 2. Total \\ H: capital-goods \\ F: consumption-go \\ Case \ 3. Total \\ H: capital-goods \\ F: consumption-go \\ Note: When the eff \\ Rybczenski 1955 \\ 9. Introduction \\ r_{F}=r_{F}(0)=\Im r_{F}/\Im r_{F} \\ \hline Marginal \\ Case \ 1. Total \\ H: capit \\ F: consum \\ Case \ 2. Total \\ H: capit \\ F: consum \\ Case \ 3. Total \\ H: capit \\ F: consum \\ Case \ 3. Total \\ H: capit \\ F: consum \\ Case \ 3. Total \\ H: capit \\ F: consum \\ Case \ 3. Total \\ H: capit \\ F: consum \\ F: consum \\ Case \ 3. Total \\ H: capit \\ F: consum \\ F: consum \\ Case \ 3. Total \\ F: consum \\ F: con$	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.9758 0 7.3468 cettive labot only holds of relative r _H (O) _{nomina} roductivity il-goods mption-goo	(A(0.0000 0.0000 0.1279 -0.1887 0.1111 ar is used, s under th price lev 0.05094 0.05094 0.05094 ds 0.05094	(w/r)/(w/r) 0.0000 0.0000 (0.3000) 0.1918 (0.3467) 0.0368 the current e condition el, $p=P_H$ K_H), when $^{P}F(margl Pro)$	sigma #DIV/0! #DIV/0! #DIV/0! -0.6666	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ and the y\\ IJon\\ W_F=W_F(0)\\ W_{F(matgipro.}\\ 4.5375\\ \end{array}$	$\begin{array}{c} 85.68\\ 111.12\\ 74.74\\ 85.68\\ 77.78\\ 89.08\\ 75.83\\ 72.60\\ 77.49\\ \text{rofit rate ar}\\ \mathbf{res, R. W}\\ = 0\mathbf{Y}_{F}/0\mathbf{L}_{F}\\ P_{H}\\ 1\\ 1\\ 1\end{array}$	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ e \text{ connecte}\\ \textbf{, 1965]}\\ W_{H(0)\text{nomina}}\\ P_{F}\\ 1\end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuel:}\\ = \textbf{P} \cdot (\textbf{e}\textbf{Y}_{\textbf{H}} / \textbf{e})\\ \textbf{g} = \textbf{P}_{\text{H}} / \textbf{P}_{\text{F}}\\ 1\\ 1.0000\\ \hline \end{array}$	7.5799 9.8305 6.6121 =k(0) 7.5799 7.8644 7.4576 7.5799 7.3468). son [1941] L _H) Thanges (%) for r & w 1.4286 1.3764 0.8390 0.8387 1.0000
	Case 1. Total H: capital-goods F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff Rybczenski [1955 9. Introduction d $r_F=r_F(0)=\Im F_F/\Im K_F$ Marginal Case 1. Total H: capital Case 2. Total H: capita Case 3. Total H: capita F: consumption-go Note: When the eff Rybczenski [1955 9. Introduction d H: capital Case 3. Total H: capital Case 3. Total H: capital Case 3. Total H: capital Case 3. Total	7.5799 9.8305 0 6.6121 7.5799 7.8644 0 7.4576 7.5799 7.3648 cettive labot 0 nly holds 0 f relative r _H (0) _{nomina} productivity ul-goods mption -goo ul-goods	(A) (A) (0.0000) (0.0000) (0.0000) (0.1279) (0.1279) (0.1279) (0.1279) (0.1279) (0.1279) (0.1279) (0.1111) (0.1111) (0.1111) (0.05094) (0.05094) (0.04908) (0.04908)	$(w/r)/(w/r) \\ 0.0000 \\ 0.0000 \\ 0.0000 \\ (0.3000) \\ 0.1918 \\ (0.3467) \\ 0.0368 \\ \text{the current} \\ e \text{ condition} \\ el, p = P_{H} \\ K_{H}), \text{ when} \\ F_{F(margiPro_{J})} \\ 0.06071 \\ 0.05094 \\ \end{bmatrix}$	sigma #DIV/0! #DIV/0! #DIV/0! -0.6666	$\begin{array}{c} 4.3645\\ 3.9622\\ 4.5375\\ 4.3645\\ 3.9622\\ 4.5375\\ 3.8628\\ 3.5630\\ 4.0393\\ and the p\\ \textbf{w}_{F}=w_{F}(0)\\ w_{F}(margiaro,pro.\\ 4.5375\\ 4.5375\\ \hline 4.5375\\ \end{array}$	$\begin{array}{c} 85.68\\ 111.12\\ 74.74\\ 85.68\\ 77.78\\ 89.08\\ 75.83\\ 72.60\\ 77.49\\ \text{rofit rate ar}\\ \mathbf{res, R. W}\\ = 0\mathbf{Y}_{F}/0\mathbf{L}_{F}\\ P_{H}\\ 1\\ 1\\ 1\end{array}$	$\begin{array}{c} 0.0117\\ 0.0090\\ 0.0134\\ =\alpha\\ 0.0117\\ 0.0129\\ 0.0112\\ 0.0132\\ 0.0138\\ 0.0129\\ e \text{ connecte}\\ \textbf{, 1965]}\\ W_{H(0)nomina}\\ P_F\\ 1\\ 1.0000 \end{array}$	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1000\\ 0.1099\\ 0.0948\\ d \text{ with } k (0\\ \textbf{S-Samuel:}\\ = \textbf{P} \cdot (\textbf{e}\textbf{Y}_{\textbf{H}} / \textbf{e})\\ \textbf{g} = \textbf{P}_{\text{H}} / \textbf{P}_{\text{F}}\\ 1\\ 1.0000\\ \hline \end{array}$	$\begin{array}{c} 7.5799\\ 9.8305\\ 6.6121\\ =k(0)\\ 7.5799\\ 7.8644\\ 7.4576\\ 7.5799\\ 7.3468\\).\\ \begin{array}{c} \text{son} \left[1941 \right]\\ \text{L}_{H} \right)\\ \begin{array}{c} \text{son} \left[1941 \right]\\ \text{L}_{H} \right)\\ \begin{array}{c} \text{son} \left[1941 \right]\\ 0.8390\\ 0.8587\\ \overline{1.0000}\\ 0.8592\\ \overline{1.0000}\\ 0.8992 \end{array}$

T8 Case 1 Country=	Uzawa [1962] $A(0)=k(0)^{1-\alpha}/\Omega(0)$									
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	2500	2200	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s _Π	s_H	$s_{S\Pi/Y}$	S _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.40637	0.6000	0.37594	0.04876	0.35761	4.3645
H: capita	l-goods	0.39	s=S/Y	0.40637	0.273	0.273		0.429		
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	526.25	3828.24	95.55	41	136.50	1543.00	1679.50	1072.50	976.95	2.7161
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s_H	$s_{S\Pi/Y}$	S _{SH/Y}	$W_{H(0)}$
0.08127	2.27940	0.03566	7.2745	3.1914	0.63858	0.7000	0.61678	0.05689	0.58169	2.9320
F: consur	nption-go	ods	1-s	0.59363						
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	768.75	5987.76	204.45	159.05	363.50	4109.00	4472.50	1427.50	1223.05	4.9239
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$\mathbf{s}_{S\Pi/Y}$	s _{SH/Y}	$W_{F(0)}$
0.08127	1.33879	0.06071	7.7890	5.8179	0.31917	0.5624	0.28656	0.04571	0.27346	5.3451
Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.37552$										$H(0) > \Omega_{F(0)}$

1. Basic variables a	nd p	aram	eters	under	conve	rgence	(delta=a	alpha)	
					*		*		- *

	$g_{Y}^{*=}g_{K}^{*}$	g ^ *	g_y^*	\varOmega^*	r^*	i	$\beta^*_{(\delta=\alpha)}$	n	α
Case 1. Total	0.1363	0.1174	0.1278	1.5956	0.0509	0.33485	0.6494	0.00755	0.08127
H: capital-goods	0.1658	0.1443	0.1571	2.2794	0.0357	0.52225	0.7237	0.00755	0.08127
F: consumption-goo	0.1206	0.1031	0.1122	1.3388	0.0607	0.26448	0.6103	0.00755	0.08127
Case 2. Total	0.1363	0.1174	0.1278	1.5956	0.0509	0.33485	0.6494	0.00755	0.08127
H: capital-goods	0.1567	0.1344	0.1480	1.8026	0.0509	0.41686	0.6775	0.00755	0.09182
F: consumption-goo	0.1276	0.1100	0.1192	1.5166	0.0509	0.30356	0.6377	0.00755	0.07725
Case 3. Total	0.1465	0.1241	0.1379	1.9578	0.0509	0.41087	0.6979	0.00755	0.09973
H: capital-goods	0.1772	0.1532	0.1684	1.8325	0.0491	0.47797	0.6794	0.00755	0.08994
F: consumption-goo	0.1260	0.1050	0.1176	2.0473	0.0521	0.36295	0.7107	0.00755	0.10672

2. Basic variables and parameters under the current situation (delta>alpha)

	g Y(a)	$g_{K(a)}$	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	β	k(0)	y(0)
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.0893	0.85223	-0.2028	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0289	0.0322	0.0878	0.94389	-0.2202	7.2745	3.1914
F: consumption-goo	0.0489	0.0986	0.0339	0.0410	0.0904	0.86925	-0.2589	7.7890	5.8179
For min capital-good	ls growth	0.0509	-						
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.0893	0.85223	-0.2028	7.5799	4.7506
H: capital-goods	0.0400	0.4000	-0.0036	0.0322	0.0852	1.00850	-0.3310	5.8196	3.2285
F: consumption-goo	0.0489	0.0999	0.0342	0.0410	0.0916	0.88382	-0.2461	8.7849	5.7925
			-						
Case 3. Total	0.0800	0.3000	0.0433	0.0718	0.0804	0.89869	-0.2008	7.5799	3.8716
H: capital-goods	0.0400	0.4000	-0.0028	0.0322	0.0864	1.00591	-0.3265	6.3473	3.4637
F: consumption-goo	0.0473	0.0782	0.0322	0.0395	0.0701	0.91797	-0.2073	8.6544	4.2272
$q \dots = q \dots - q q \dots - (1 - q)$	v)n (v	delta=(n+	(i_iß*_n))	$/G(1_B*))$		$1 - ((1/i))(\alpha)$	$k(0)^{(8)}$	((m.	

 $g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta * - n))/(i(1 - \beta *)) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))$

He	cksc	her	-01	ılin

3. Relat	3. Relationships between quantities: $K_H \& K_F$ and $L_H \& L_F$ $K=(a_{KH},y_H)L_H+(a_{KF},y_F)L_F$										
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			\mathbf{y}_{H}	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} .y _H)L	$+(a_{LF}y_F)L_F$	$L=a_{LH}Y_{H}+a_{I}$	LF.YF		
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	\mathbf{y}_{F}	$\boldsymbol{a_{LF}}{=}1/y_F$	L _H &L _F	$Y_{H}\&Y_{F}$	$K = K_H + K_F I$	$L=L_H+L_F$		
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295		
	H: capital-goods	2.2794		3.1914	0.31334	526.25	1679.50	3828	526		
	F: consumption-goo	ods	1.3388	5.8179	0.17188	768.75	4472.50	5988	769		
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295		
	H: capital-goods	1.8026		3.2285	0.30974	526.25	1699.00	3063	526		
	F: consumption-goo	ods	1.5166	5.7925	0.17264	768.75	4453.00	6753	769		
Case 3.	Total	1.9578		3.8716	0.25829	1295	5014	9816	1295		
	H: capital-goods	1.8325		3.4637	0.28871	603.13	2089.05	3828	603		
	F: consumption-goo	ods	2.0473	4.2272	0.23656	691.87	2924.67	5988	692		

T8 Case 2. K decreases in capital-goods by 20% Uzawa [1962]:Ω _H >Ω _F										
Country=	capital-g	oods+con	sumption-	goods: T	`=H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	2500	2200	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.40637	0.6000	0.37594	0.04876	0.35761	4.3645
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	0.01162		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	- Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	526.25	3062.59	109.21	47	156.01	1543.00	1699.00	858.00	748.79	2.7464
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	S	s _Π	s_{H}	$s_{S\Pi/Y}$	$s_{\rm SH/Y}$	$W_{H(0)}$
0.09182	1.80258	0.05094	5.8196	3.2285	0.50500	0.7000	0.47100	0.06428	0.44073	2.9320
F: consur	nption-gk	loidsg goal:	seek, where	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	-0.00436		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	768.75	6753.41	190.79	153.20	343.99	4109.00	4453.00	1642.00	1451.21	4.8974
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s_{H}	$s_{S\Pi/Y}$	$s_{SH/Y}$	W _{F(0)}
0.07725	1.51660	0.05094	8.7849	5.7925	0.36874	0.5546	0.34048	0.04285	0.32589	5.3451
							$Y_{H(0)}/Y_{F(0)}$	0.38154		

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The Penrose cu	4. The Penrose curve, B_K , and the assets valuation ratio, v								
	Ω^*	I/K	g _K *	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. Total	1.5956	0.2099	0.1363	1.5398	0.0509	0.0331	1.5398	1.0000	1.5398
H: capital-goods	2.2794	0.2291	0.1658	1.3818	0.0357	0.0258	1.3818	1.0000	1.3818
F: consumption-goo	1.3388	0.1976	0.1206	1.6385	0.0607	0.0371	1.6385	1.0000	1.6385
Case 2. Total	1.5956	0.2099	0.1363	1.5398	0.0509	0.0331	1.5398	1.0000	1.5398
H: capital-goods	1.8026	0.2313	0.1676	1.3794	0.0509	0.0369	1.3794	1.0000	1.4760
F: consumption-goo	1.5166	0.2002	0.1201	1.6669	0.0509	0.0306	1.6669	1.0000	1.5682
Case 3. Total	1.9578	0.2099	0.1389	1.5106	0.0625	0.0414	1.5106	1.0000	1.4329
H: capital-goods	1.8325	0.2608	0.1673	1.5589	0.0491	0.0315	1.5589	1.0000	1.4719
F: consumption-goo	2.0473	0.1773	0.1238	1.4321	0.0521	0.0364	1.4321	1.0000	1.4071

5. The relative pri	ice level:	real vs. r	nominal	(a)	Inf. or def	(b)		(c)	
_	r(0)	r=∂Yt/∂Kt	Py=r(0)/r real	r _{M(0)} given	py=rM(0)/r rea /	M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0331	0.9976	0.0301	1.0972
H: capital-goods	0.03566	0.03566	1.0000	0.0330	0.9255	0.0258	1.2789	0.0235	1.4063
F: consumption-goo	0.06071	0.06071	1.0000	0.0330	0.5436	0.0371	0.8907	0.0337	0.9801
Case 2. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0331	0.9976	0.0301	1.0972
H: capital-goods	0.05094	0.05094	1.0000	0.0330	0.6478	0.0345	0.9562	0.0336	0.9831
F: consumption-goo	0.05094	0.05094	1.0000	0.0330	0.6479	0.0325	1.0160	0.0278	1.1879
Case 3. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0436	0.7565	0.0376	0.8774
H: capital-goods	0.04908	0.04908	1.0000	0.0330	0.6724	0.0333	0.9897	0.0286	1.1527
F: consumption-goo	0.05213	0.05213	1.0000	0.0330	0.6331	0.0370	0.8908	0.0331	0.9976
Note: If the price law	al of outp	nt Dic	na raal-n	ominal an	d the electic	ity of sub	stitution	σ is alway	e 1.0

Note: If the price level of output, P_{Y} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. <u>r(real)</u>= $_{3}YU_{3}Kt^{\alpha}Lt^{1-\alpha}$ and w(real)= $_{3}YU_{0}Lt^{-(1-\alpha)}AtK^{\alpha}Lt^{\alpha}$.

6. Relat	tionships between p	price level	s: r _H &	w _H for P	P_H and r_I	_F & w _F f	or P _F	Rybczynski
For H,	$P_{H}=a_{KH}r_{H}+a_{LH}w_{H}$	When real=	nominal, th	e price leve	el is 1.0.	The e	elasticity	of substitution is 1.0.
For F	$P_{-}=a_{-}, r_{-}+a_{-}, w_{-}$	P	r	142	142	P	P	$p = P \dots / P$

For F,	$P_F = a_{KF} r_F + a_{LF} w_F$	r_H	r_F	W_H	W_F	P_{H}	$P_F p = P_H / P_F$	
Case 1.	Total	0.05094		4.3645		1.0000	1.0000	
	H: capital-goods	0.03566		2.9320		1	1	
	F: consumption-goo	ds	0.06071		5.3451		1	
Case 2.	Total	0.05094		4.3645		1.0000	1.0000	
	H: capital-goods	0.05094		2.9320		1	1	
	F: consumption-goo	ds	0.05094		5.3451		1	
Case 3.	Total	0.05094		3.4855		1.0000	1.0000	
	H: capital-goods	0.04908		3.1522		1	1	
	F: consumption-goo	ds	0.05213		3.7761		1	

			n aaada he	. 100/				Ead	av [1060]
	reases in co	-	•				0.10502		ay [1960]
Country=capital-					11/(0)	$\Delta Y(0)/Y(0)$			$(0)^{1-\alpha}/\Omega(0)$
n L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755 1295		300	200	500	4514	5014	2500	2200	3.1635
α Ω(0)	r(0)	k(0)	y(0)	S	S _{II}	S _H	S _{SII/Y}	S _{SH/Y}	w(0)
0.09973 1.95783	0.05094	7.5799	3.8716	0.49863	0.6000	0.46672	0.05984	0.43880	3.4855
H: capital-goods		a (a)				$\Delta Y_{H(0)}/Y_{H(0)}$	0.24385		
n L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755 603.13		131.52		187.88	1901.17	2089.05	1215.25	1083.73	2.9333
$\alpha \qquad \Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	S	s_{Π}	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}
0.08994 1.83253		6.3473	3.4637	0.58172	0.7000	0.55362	0.06295	0.51877	3.1522
F: consumption-g		$\Delta L/L$:	-0.1			• (4)	-0.34608		
n L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{F}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755 691.87	5987.76	168.48	143.64	312.12	2612.55	2924.67	1284.75	1116.27	3.3576
$\alpha \qquad \Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	$\mathbf{s}_{\mathrm{SH/Y}}$	$W_{F(0)}$
0.10672 2.04733	0.05213	8.6544	4.2272	0.43928	0.5398	0.40500	0.05761	0.38167	3.7761
						$Y_{H(0)}/Y_{F(0)}$	0.71429	Ω	$H(0) \leq \Omega_{F(0)}$
7. The neutrality	y of financ	ial assets	and the	coeffcient	t <i>x=r/w</i>	ke*=Ω*	*^(1/(1-α))	xe*/x	
	r _{CB} goal see		$r^{*/r}_{M^{*}}$	c _{CB} =r _M */r _{CB}	α	$x_0 = \alpha_x / k (0$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_e^*
Case 1. Total	0.0301	0.0331	1.5398	1.09987	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods	0.0235	0.0258	1.3818	1.09959	0.0885	0.0122	2.4517	0.0361	0.3370
F: consumption-go		0.0371	1.6385	1.10039	0.0885	0.0114	1.3738	0.0644	0.1764
1 5	goal seek			goal seek)			
Case 2. Total	0.0301	0.0331	1.5398	1.09988	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods	0.0336	0.0345	1.3794	1.10007	0.1011	0.0152	1.9132	0.0528	0.2876
F: consumption-go	0.0278	0.0325	1.6669	1.09999	0.0837	0.0101	1.5704	0.0533	0.1889
Case 3. Total	0.0376	0.0436	1.5106	1.10004	0.1108	0.0117	2.1091	0.0525	0.2222
H: capital-goods	0.0286	0.0333	1.5589	1.09969	0.0988	0.0139	1.9456	0.0508	0.2744
F: consumption-go	0.0331	0.0370	1.4321	1.10040	0.1195	0.0102	2.2303	0.0536	0.1908
Note: When the ef	fective labor	ur is used,	the coeffic	ient, x_0 ar	$d x_e$, are	connected	with ke (0)) (see also l	pelow).
8. Data for the I	lecksher-0	Ohlin, Ry	bczynski	, the Stol				ef parado	ЭX
$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(re	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$
Case 1. Total	7.5799		(w/r)/(w/r)		4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods		0.0000	0.0000	#DIV/0!		82.23	0.0122		
	7.2745				2.9320			0.0885	7.2745
F: consumption-go		0.0000	0.0000	#DIV/0!	2.9320 5.3451	88.05	0.0122	0.0885 0.0885	7.2745
							0.0114		
							0.0114	0.0885	7.7890
F: consumption-go Case 2. Total H: capital-goods	0 7.7890 7.5799 5.8196	0.0000	0.0000	#DIV/0!	5.3451 4.3645 2.9320	88.05 85.68 57.56	0.0114 =0 0.0117 0.0174	0.0885 $1/(1-\alpha)=\alpha_x$ 0.0885 0.1011	7.7890 =k(0) 7.5799 5.8196
F: consumption-go Case 2. Total	0 7.7890 7.5799 5.8196	0.0000	0.0000	#DIV/0!	5.3451 4.3645	88.05 85.68	0.0114 =0 0.0117	0.0885 $\alpha/(1-\alpha)=\alpha_x$ 0.0885	7.7890 =k(0) 7.5799
F: consumption-go Case 2. Total H: capital-goods F: consumption-go	7.7890 7.5799 5.8196 8.7849	0.0000	0.0000	#DIV/0!	5.3451 4.3645 2.9320 5.3451	88.05 85.68 57.56 104.94	0.0114 =0 0.0117 0.0174 0.0095	$\begin{array}{c} 0.0885\\ (1-\alpha) = \alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total	00 7.7890 7.5799 5.8196 8.7849 7.5799	0.0000 -0.2000 0.1279	0.0000 (0.3000) 0.1918	#DIV/0! -0.6666 -0.6666	5.3451 4.3645 2.9320 5.3451 3.4855	88.05 85.68 57.56 104.94 68.43	0.0114 =0 0.0117 0.0174 0.0095 0.0146	$\begin{array}{c} 0.0885\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods	7.7890 7.5799 5.8196 8.7849 7.5799 6.3473	0.0000 -0.2000 0.1279 -0.1275	0.0000 (0.3000) 0.1918 (0.2189)	#DIV/0! -0.6666 -0.6666 -0.5822	5.3451 4.3645 2.9320 5.3451 3.4855 3.1522	88.05 85.68 57.56 104.94 68.43 64.23	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156	$\begin{array}{c} 0.0885\\ 1/(1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ \end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go	0 7.7890 7.5799 5.8196 8.7849 7.5799 6.3473 0 8.6544	0.0000 -0.2000 0.1279 -0.1275 0.1111	0.0000 (0.3000) 0.1918 (0.2189) (0.1772)	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269	5.3451 4.3645 2.9320 5.3451 3.4855 3.1522 3.7761	88.05 85.68 57.56 104.94 68.43 64.23 72.44	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138	$\begin{array}{c} 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ \end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used,	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate	5.3451 4.3645 2.9320 5.3451 3.4855 3.1522 3.7761	88.05 85.68 57.56 104.94 68.43 64.23 72.44	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138	$\begin{array}{c} 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ \end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the ef Rybczenski [1955	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor only holds	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate n of H-O.	5.3451 4.3645 2.9320 5.3451 3.4855 3.1522 3.7761 and the pr	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte	$\begin{array}{c} 0.0885\\ (1-\alpha)=\alpha_x\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ \end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the eff	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor only holds	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate n of H-O.	5.3451 4.3645 2.9320 5.3451 3.4855 3.1522 3.7761 and the pr	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte	0.0885 $k/(1-\alpha)=\alpha_x$ 0.0885 0.1011 0.0837 0.1108 0.0988 0.1195 d with k (0	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the ef Rybczenski [1955	0 7.7890 7.5799 5.8196 8.7849 7.5799 6.3473 0 8.6544 fective labor only holds of relative	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lev	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition el, $p = P_H$	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 : wage rate n of H-O. -//P _F : Du	5.3451 4.3645 2.9320 5.3451 3.4855 3.1522 3.7761 and the pr ality [Joi	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W.	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte	0.0885 $x/(1-\alpha)=\alpha_x$ 0.0885 0.1011 0.0837 0.1108 0.0988 0.1195 cd with k (C S-Samuel	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544)).
$\label{eq:response} \begin{array}{l} F: \mbox{ consumption-go}\\ Case 2. \ Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-go}\\ Case 3. \ Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-go}\\ Note: \ When the \ eff\\ Rybczenski \ [1955\\ \textbf{9. Introduction}\\ r_{p}{=}r_{F}(0){=}{}_{\textbf{9}}Y_{p}/{}_{\textbf{9}}K_{F} \end{array}$	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor only holds of relative r _H (0) _{noming}	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lev al=p·(@Yµ/c	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition el, $p = P_H$ $_{\rm H}$, where	#DIV/0! -0.6666 -0.6666 -0.6269 : wage rate n of H-O. $//P_F$: Du. e p=P _H /P _F	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jon\\ w_F=w_F(0), 0.5, 0.5]} \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W.	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte , 1965] WH(0)nomina	0.0885 $t/(1-\alpha)=\alpha_x$ 0.0885 0.1011 0.0837 0.1108 0.0988 0.1195 d with k (C S-Samuel $_i=p\cdot(\Theta Y_{H}/\Theta$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544)). son [1941] L _H)
$\label{eq:response} \begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. \ Total\\ H: \ capital-goods\\ F: \ consumption-geo\\ Case 3. \ Total\\ H: \ capital-goods\\ F: \ consumption-geo\\ Note: \ When the eff\\ Rybczenski [1955]\\ 9. \ Introduction\\ r_{F} = r_{F}(0) = \Im Y_{F} / \Im K_{F}\\ Marginal \end{array}$	0 7.7890 7.5799 5.8196 8.7849 7.5799 6.3473 0 8.6544 fective labor only holds of relative	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lev $u_i = p \cdot (oY_H/c$	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition el, $p = P_H$ $_{\rm H}$, where	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate n of H-O. $/P_F$: Du e p=P _H /P _F $ _{W H(margi, Pro})$	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jon\\ w_F=w_F(0), 0.5, 0.5]} \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W.	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte	0.0885 $x/(1-\alpha)=\alpha_x$ 0.0885 0.1011 0.0837 0.1108 0.0988 0.1195 cd with k (C S-Samuel	$\begin{array}{c} 7.7890\\ =k(0)\\ 7.5799\\ 5.8196\\ 8.7849\\ \hline\\ 7.5799\\ 6.3473\\ 8.6544\\)).\\ \\ \textbf{son [1941]}\\ L_{t1})\\ \\ \\ \\ \textbf{Changes (\%)}\end{array}$
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the ef Rybczenski [1955 9. Introduction $r_{\rm F}=r_{\rm F}(0)=\Im Y_{\rm F}/\Im K_{\rm F}$ Marginal Case 1. Total	o 7.7890 7.5799 5.8196 o 8.7849 7.5799 6.3473 o 8.6544 fective laboi of relative r _H (0) _{nomina}	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lev al= p ·(∂Y ₁ /c 0.05094	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition el, $p = P_H$ $_{\rm H}$, where	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate the p=P _H /P _F : Du $e p=P_H/P_F$: Du 4.3645	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jon\\ w_F=w_F(0), 0.5, 0.5]} \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar res, R. W .	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte , 1965] WH(0)nomina	$\begin{array}{l} 0.0885\\ (.1(-\alpha)=\alpha_{x}\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ \text{od} \ \text{with} \ k \ (C\\ \textbf{S-Samuel}\\ a=p \cdot (\mathbf{a} \mathbf{Y}_{\text{H}}/\mathbf{a}\\ p = P_{H}/P_{F} \end{array}$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544)). son [1941] L ₁) Changes (%) for r & w
F: consumption-go Case 2. Total H: capital-goods F: consumption-go Case 3. Total H: capital-goods F: consumption-go Note: When the ef Rybczenski 11955 9. Introduction $r_{\rm F}$ = $r_{\rm F}(0)$ = $\vartheta Y_{\rm F}/\vartheta K_{\rm F}$ Marginal Case 1. Total H: capital	7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor of relative r _{FI} (0) _{nomin} productivity al-goods	0.0000 -0.2000 0.1275 0.1111 ur is used, s under th price lev $al=p \cdot (aY_H/c$ 0.05094 0.03566	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition (el, $p = P_H$ $_{p = K_H}$), when $_{r \ F(margl: Pro)}$	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate n of H-O. $/P_F$: Du e p=P _H /P _F $ _{W H(margi, Pro})$	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jow $_{F}=w_{F}(0)$]}\\ \textbf{w}_{F}=w_{F}(0)\\ \textbf{w}_{F}(margiaron $_{F}$)\\ \textbf{w}_{F}(marg$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W.	$\begin{array}{c} 0.0114 \\ =0 \\ 0.0117 \\ 0.0174 \\ 0.0095 \\ 0.0146 \\ 0.0156 \\ 0.0138 \\ e \ connecte \\ \textbf{, 1965]} \\ W_{\rm H(0)nomins} \\ P_F \end{array}$	0.0885 $t/(1-\alpha)=\alpha_x$ 0.0885 0.1011 0.0837 0.1108 0.0988 0.1195 d with k (C S-Samuel $_i=p\cdot(\Theta Y_{H}/\Theta$	7.7890 =k(0) 7.5799 5.8196 8.7849 7.5799 6.3473 8.6544 1). son [1941] L ₁₁) Thanges (%) for r & w 1.4286
$\label{eq:response} \begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-geo}\\ Case 3. Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-geo}\\ Note: \mbox{ When the eff}\\ Ry \mbox{ bcc} estimates if 1955\\ \textbf{9. Introduction}\\ r_{\rm F}^{-} r_{\rm F}(0) {=} \Im Y_{\rm F} / \partial K_{\rm F}\\ \hline \mbox{ Marginal}\\ Case 1. Total\\ H: \mbox{ capital}\\ F: \mbox{ consumption-geo}\\ F: \mbox{ consumption-geo}\\ H: cons$	o 7.7890 7.5799 5.8196 o 8.7849 7.5799 6.3473 o 8.6544 fective laboi of relative r _H (0) _{nomina}	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lev al=P·(∂Y _H /c 0.05094 0.03566 vds	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition el, $p = P_H$ $_{\rm H}$, where	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate n of H-O. $/P_F$: Du e p=P _H /P _F WH(murgi, Pro- 4.3645 2.9320	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jon\\ w_F=w_F(0), 0.5, 0.5]} \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar res, R. W .	0.0114 =0 0.0117 0.0174 0.0095 0.0146 0.0156 0.0138 e connecte , 1965] WH(0)nomina	$\begin{array}{l} 0.0885\\ (.1(-\alpha)=\alpha_{x}\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ \text{od} \ \text{with} \ k \ (C\\ \textbf{S-Samuel}\\ a=p \cdot (\mathbf{a} \mathbf{Y}_{\text{H}}/\mathbf{a}\\ p = P_{H}/P_{F} \end{array}$	$\begin{array}{c} 7.7890\\ =k(0)\\ 7.5799\\ 5.8196\\ 8.7849\\ 7.5799\\ 6.3473\\ 8.6544\\)).\\ \textbf{son [1941]}\\ L_{11})\\ \text{Thanges (%)}\\ for r & w\\ 1.4286\\ 1.3764\\ \end{array}$
$\label{eq:response} \begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-geo}\\ Case 3. Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-geo}\\ Note: \mbox{ When the ef}\\ Rybczenski [1955]\\ 9. Introduction \\ r_{F} = r_{F}(0) = \Im r_{F} \partial K_{F} \\ \hline Marginal\\ Case 1. Total\\ H: \mbox{ capital}\\ F: \mbox{ consum}\\ Case 2. Total \\ \end{array}$	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor of relative r _H (0) _{nomina} productivity al-goods	0.0000 -0.2000 0.1275 0.1111 ur is used, s under th price lev al=p·(∂Y ₁ /c 0.05094 0.03566 <u>ods</u>	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition (el, $p = P_H$ $_{p = K_H}$), when $_{r \ F(margl: Pro)}$	#DIV/0! -0.6666 -0.5822 0.6269 wage rate m of H-O. $/P_F$: Du $e p=P_H/P_F$ 4.3645 2.9320 4.3645	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jow $_{F}=w_{F}(0)$]}\\ \textbf{w}_{F}=w_{F}(0)\\ \textbf{w}_{F}(margiaron $_{F}$)\\ \textbf{w}_{F}(marg$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W. $= \Im Y_F / \partial L_F$ P_H 1	$\begin{array}{c} 0.0114 \\ =0 \\ 0.0117 \\ 0.0174 \\ 0.0095 \\ 0.0146 \\ 0.0156 \\ 0.0138 \\ e \ connecte \\ \textbf{, 1965]} \\ W_{\rm H(0)nomins} \\ P_F \end{array}$	$\begin{array}{c} 0.0885\\ (/(1-\alpha)=\alpha_{\rm x}\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ {\rm sd} \mbox{ with } k({\rm C}\\ {\bf S-Samuel}\\ {\bf s=P}_{\rm H}/P_{\rm F}\\ 1\\ 1\\ \end{array}$	$\begin{array}{c} 7.7890 \\ = k(0) \\ 7.5799 \\ 5.8196 \\ 8.7849 \\ \hline 7.5799 \\ 6.3473 \\ 8.6544 \\)). \\ \hline \text{son [1941]} \\ L_{11} \\ \\ L_{11} \\ \\ \hline \text{changes (\%)} \\ for r \& w \\ 1.4286 \\ 1.3764 \\ 0.8390 \\ \hline 0.8390 \\ \end{array}$
$\begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. \ \mbox{ Total}\\ H: \ \mbox{ capital-goods}\\ F: \ \mbox{ consumption-geo}\\ Case 3. \ \ \mbox{ Total}\\ H: \ \ \mbox{ capital-goods}\\ F: \ \ \mbox{ consumption-geo}\\ Note: \ \ \ \mbox{ When the ef}\\ Rybezenski \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor 1 only hold: of relative r _H (0) _{nominin} productivity al-goods al-goods al-goods	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lew 0.05094 0.05094	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition $el, p = P_H$ $_{5}K_{H}$), when $_{F f(margle Pro.)}$ 0.06071	#DIV/0! -0.6666 -0.6666 -0.5822 0.6269 wage rate n of H-O. $/P_F$: Du e p=P _H /P _F WH(murgi, Pro- 4.3645 2.9320	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ and the pr\\ ality [Jon\\ w_F=w_F(0)\\ w_F(margipro.\\ 5.3451\\ \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar res, R. W .	$\begin{array}{c} 0.0114 \\ = \sigma \\ 0.0117 \\ 0.0174 \\ 0.0095 \\ 0.0146 \\ 0.0156 \\ 0.0138 \\ e \text{ connecte} \\ \textbf{, 1965]} \\ \text{W}_{H(0)\text{nomina}} \\ P_{F} \\ 1 \end{array}$	$\begin{array}{l} 0.0885\\ (.1(-\alpha)=\alpha_{x}\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ \text{od} \ \text{with} \ k \ (C\\ \textbf{S-Samuel}\\ a=p \cdot (\mathbf{a} \mathbf{Y}_{\text{H}}/\mathbf{a}\\ p = P_{H}/P_{F} \end{array}$	$\begin{array}{c} 7.7890\\ =k(0)\\ 7.5799\\ 5.8196\\ 8.7849\\ 7.5799\\ 6.3473\\ 8.6544\\)).\\ \\ \begin{array}{c} \text{son} \left[1941\right]\\ L_{H} \right)\\ \hline \text{hanges}\left(\%\right)\\ \text{for } r \& w\\ 1.4286\\ \underline{1.3764}\\ 0.8387\\ \end{array}$
$\begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. \ \mbox{ Total}\\ H: \ \mbox{ capital-goods}\\ F: \ \mbox{ consumption-geo}\\ Case 3. \ \ \mbox{ Total}\\ H: \ \ \mbox{ capital-goods}\\ F: \ \ \mbox{ consumption-geo}\\ Note: \ \ \ \mbox{ When the ef}\\ Ry \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $	0 7.7890 7.5799 5.8196 0 8.7849 7.5799 6.3473 0 8.6544 fective labor of relative r _H (0) _{nomina} productivity al-goods	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lew 0.05094 0.05094	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition (el, $p = P_H$ $_{p = K_H}$), when $_{r \ F(margl: Pro)}$	#DIV/0! -0.6666 -0.5822 0.6269 wage rate m of H-O. $/P_F$: Du $e p=P_H/P_F$ 4.3645 2.9320 4.3645	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ \text{and the pr}\\ \textbf{ality [Jow $_{F}=w_{F}(0)$]}\\ \textbf{w}_{F}=w_{F}(0)\\ \textbf{w}_{F}(margiaron $_{F}$)\\ \textbf{w}_{F}(marg$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W. $= \Im Y_F / \partial L_F$ P_H 1	$\begin{array}{c} 0.0114 \\ =0 \\ 0.0117 \\ 0.0174 \\ 0.0095 \\ 0.0146 \\ 0.0156 \\ 0.0138 \\ e \ connecte \\ \textbf{, 1965]} \\ W_{\rm H(0)nomins} \\ P_F \end{array}$	$\begin{array}{c} 0.0885\\ (/(1-\alpha)=\alpha_{\rm x}\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ {\rm sd} \mbox{ with } k({\rm C}\\ {\bf S-Samuel}\\ {\bf s=P}_{\rm H}/P_{\rm F}\\ 1\\ 1\\ \end{array}$	$\begin{array}{c} 7.7890 \\ = k(0) \\ 7.5799 \\ 5.8196 \\ 8.7849 \\ \hline 7.5799 \\ 6.3473 \\ 8.6544 \\)). \\ \hline \\ \textbf{son [1941]} \\ L_{11}) \\ \hline \\ Changes (\%) \\ for r \& w \\ 1.4286 \\ 1.3764 \\ 0.8390 \\ \hline \end{array}$
$\begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. \ Total\\ H: \ capital-goods\\ F: \ consumption-geo\\ Case 3. \ Total\\ H: \ capital-goods\\ F: \ consumption-geo\\ Note: \ When the \ eff\\ Rybczenski [1955\\ 9. \ Introduction\\ r_{\rm F}\mbox{-}r_{\rm F}(0)\mbox{-} \otimes Y_{\rm F}\mbox{-} \otimes K_{\rm F}\\ \hline \ Marginal\\ Case 1. \ Total\\ H: \ capita\\ F: \ consum\\ Case 2. \ Total\\ H: \ capita\\ F: \ consum\\ Case 2. \ Total\\ H: \ capita\\ F: \ consum\\ Case 3. \ Total\\ H: \ capita\\ T: \ consum\\ T: \ consum\ T: \ consum\\ T: \ consum\ T: \ consum\$	o 7.7890 7.5799 5.8196 o 8.7849 7.5799 6.3473 o 8.6544 fective laboo of relative r _F (0) _{nomin} productivity al -goods mption -goo	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lev $a_1 = p \cdot (a_Y a_1/c^2)$ 0.05094 0.03566 <u>ol.05094</u> 0.05094 0.05094 0.05094	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition $el, p = P_H$ $_{5}K_{H}$), when $_{F f(margle Pro.)}$ 0.06071	#DIV/0! -0.6666 -0.6822 0.6269 wage rate n of H-O. // P_F : Du e p=P _H /P _F WHomergi.Pro. 4.3645 2.9320 4.3645	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ and the pr\\ ality [Jon\\ w_F=w_F(0)\\ w_F(margipro.\\ 5.3451\\ \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar nes, R. W. $= \Im Y_F / \partial L_F$ P_H 1	$\begin{array}{c} 0.0114 \\ = \sigma \\ 0.0117 \\ 0.0174 \\ 0.0095 \\ 0.0146 \\ 0.0156 \\ 0.0138 \\ e \text{ connecte} \\ \textbf{, 1965]} \\ \text{W}_{H(0)\text{nomina}} \\ P_{F} \\ 1 \end{array}$	$\begin{array}{c} 0.0885\\ (/(1-\alpha)=\alpha_{\rm x}\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ {\rm sd} \mbox{ with } k({\rm C}\\ {\bf S-Samuel}\\ {\bf s=P}_{\rm H}/P_{\rm F}\\ 1\\ 1\\ \end{array}$	$\begin{array}{c} 7.7890\\ =k(0)\\ 7.5799\\ 5.8196\\ 8.7849\\ \hline\\ 7.5799\\ 6.3473\\ 8.6544\\)).\\ \\ \begin{array}{c} \text{son [1941]}\\ L_{H}\\ \end{array}\\ \\ \begin{array}{c} \text{c}\\ 1.4286\\ 1.3764\\ 0.8380\\ 0.8587\\ 1.0000 \end{array}$
$\begin{array}{l} F: \mbox{ consumption-geo}\\ Case 2. Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-geo}\\ Case 3. Total\\ H: \mbox{ capital-goods}\\ F: \mbox{ consumption-geo}\\ Note: \mbox{ When the ef}\\ Rybczenski [1955]\\ 9. Introduction\\ r_{\rm F}=r_{\rm F}(0)=\Im Y_{\rm F}/\Im K_{\rm F}\\ \hline Marginal\\ Case 1. Total\\ H: \mbox{ capital}\\ F: \mbox{ consum}\\ Case 2. Total\\ H: \mbox{ capital}\\ F: \mbox{ consum}\\ Case 3. Total\\ H: \mbox{ capital}\\ H: \mbox{ capital}\\ Case 3. Total\\ H: \mbox{ capital}\\ H: \mbox{ capital}\\ Case 3. Total\\ H: \mbox{ capital}\\ H: \mbox{ capital}\\ Case 3. Total\\ H: \mbox{ capital}\\ H: \mbox{ capital}\\ Case 3. Total\\ H: \mbox{ capital}\\ H: capit$	o 7.7890 7.5799 5.8196 o 8.7849 7.5799 6.3473 o 8.6544 fective laboo of relative r _F (0) _{nomin} productivity al -goods mption -goo	0.0000 -0.2000 0.1279 -0.1275 0.1111 ur is used, s under th price lew price lew 0.05094 0.05094 0.05094 0.05094 0.05094	0.0000 (0.3000) 0.1918 (0.2189) (0.1772) the current e condition $el, p = P_H$ $_{5}K_{H}$), when $_{F f(margle Pro.)}$ 0.06071	#DIV/0! -0.6666 -0.5822 0.6269 wage rate no fH-0. //P _F : Du e p=P _H /P _F 4.3645 2.9320 4.3645 2.9320 3.4855	$\begin{array}{c} 5.3451\\ 4.3645\\ 2.9320\\ 5.3451\\ 3.4855\\ 3.1522\\ 3.7761\\ and the pr\\ ality [Jon\\ w_F=w_F(0)\\ w_F(margipro.\\ 5.3451\\ \end{array}$	88.05 85.68 57.56 104.94 68.43 64.23 72.44 rofit rate ar res, R. W. P_H 1 1 1.0000	$\begin{array}{c} 0.0114 \\ = \sigma \\ 0.0117 \\ 0.0174 \\ 0.0095 \\ 0.0146 \\ 0.0156 \\ 0.0138 \\ e \text{ connecte} \\ \textbf{, 1965]} \\ \text{W}_{H(0)\text{nomina}} \\ P_{F} \\ 1 \end{array}$	$\begin{array}{c} 0.0885\\ \nu/(1-\alpha)=\alpha_{\rm x}\\ 0.0885\\ 0.0885\\ 0.1011\\ 0.0837\\ 0.1108\\ 0.0988\\ 0.1195\\ {\rm cd} \ {\rm with} \ k({\rm C}\\ {\rm S-Samuel}\\ {\rm a}=p\cdot({\rm o}{\rm Y}_{\rm H}/{\rm o}\\ p=P_{\rm H}/P_{\rm F}\\ 1\\ 1.0000\\ \end{array}$	$\begin{array}{c} 7.7890 \\ = k(0) \\ 7.5799 \\ 5.8196 \\ 8.7849 \\ \hline 7.5799 \\ 6.3473 \\ 8.6544 \\)). \\ \hline son [1941] \\ L_{11} \\ \\ Changes (\%) \\ for r \& w \\ 1.4286 \\ 1.3764 \\ 0.8390 \\ 0.8387 \\ \hline 1.0000 \\ 1.0751 \\ \end{array}$

					profit and ountry: W	0	rate 5987.82		Uzawa [196 A(0)=k(0	$2]:\Omega_{\rm H} > \Omega_{\rm F}$
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	Y(0)	S(0)	S _H (0)	A(0)
0.00755	1294.90	9816.33	201.20	134.13	335.33	5652.49	5987.82	1252.96	1051.76	4.1283
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	\mathbf{s}_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)
0.05600	1.63938	0.03416	7.5808	4.6242	0.20925	0.6000	0.18176	0.03360	0.17565	4.3652
H: capita	l-ample c	ountry	K: 0.7	L W: 0.3						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	388.47	5500.00	112.73	75.15	187.88	1695.75	1883.63	700.00	587.27	3.7225
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}
0.09974	2.91990	0.03416	14.1581	4.8488	0.37162	0.6000	0.33162	0.05985	0.31178	4.3652
F: laour-a	ample cou	intry	K: 0.3	L W: 0.7						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	906.43	4316.33	88.47	58.98	147.45	3956.74	4104.20	552.96	464.49	4.2810
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	$\mathbf{s}_{\mathbf{H}}$	$s_{S\Pi/Y}$	s _{SH/Y}	WF(0)
0.03593	1.05169	0.03416	4.7619	4.5279	0.13473	0.6000	0.11567	0.02156	0.11317	4.3652
Cases corr	respond wi	ith Hecksh	er-Ohlin b	y region.			$Y_{H(0)}/Y_{F(0)}$	0.45895		

1. Basic variables and	parameters under con	vergence (delta=alpha)

	$g_{Y}^{*=g_{K}}$	g _ *	g ,*	Ω^*	r^*	i	$\beta^*{}_{(\delta=\alpha)}$	n	α
Case 1. World	0.0703	0.0588	0.0623	1.6394	0.0342	0.17412	0.6622	0.00755	0.05600
H: capital-ample country	0.0829	0.0673	0.0748	2.9199	0.0342	0.30927	0.7824	0.00755	0.09974
F: labour-ample country	0.0594	0.0496	0.0515	1.0517	0.0342	0.11210	0.5573	0.00755	0.03593
Case 2. World H: capital-ample country F: labour-ample country	0.0773 0.0919 0.0648	0.0588 0.0612 0.0513	0.0692 0.0837 0.0568	1.6394 2.9199 1.0517	0.0919 0.0919 0.0919	0.18548 0.32950 0.11938	0.6831 0.8142 0.5704	0.00755 0.00755 0.00755	0.15068 0.26838 0.09666
Case 3. World H: capital-ample country F: labour-ample country	0.0703 0.0829 0.0594	0.0588 0.0673 0.0496	0.0623 0.0748 0.0515	1.6394 2.9199 1.0517	0.0342 0.0342 0.0342	0.17413 0.30928 0.11210	0.6622 0.7824 0.5574	0.00755 0.00755 0.00755	0.05608 0.09988 0.03598

	ana para					(price /		
	$g_{Y(a)}$	g K(a)	g A(a)	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y (0)
Case 1. World	0.0800	0.3000	0.0561	0.0718	0.1310	0.62513	0.0370	7.5808	4.6242
H: capital-ample country	0.0400	0.4000	0.0298	0.0322	0.0641	0.91234	-0.1300	14.1581	4.8488
F: labour-ample country	0.0468	0.1708	0.0334	0.0389	0.1620	0.63750	-0.0802	4.7619	4.5279
For min capital-good	ds growth	0.0342							
Case 2. World	0.0800	0.3000	0.0284	0.0718	-0.1072	0.90922	-0.2262	7.5808	4.6242
H: capital-ample country	0.0400	0.4000	-0.0729	0.0322	-0.7846	1.01357	-0.1994	14.1581	4.8488
F: labour-ample country	0.0468	0.0697	0.0332	0.0389	0.0616	0.73640	-0.1660	4.7619	4.5279
Case 3. World	0.0800	0.3000	0.0561	0.0718	0.1309	0.62541	0.0368	7.5808	4.6242
H: capital-ample country	0.0400	0.4000	-0.0067	0.0322	0.0638	1.01982	-0.2374	14.1581	4.8488
F: labour-ample country	0.0468	0.1708	0.0334	0.0389	0.1620	0.63764	-0.0803	4.7619	4.5279
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	α)n d	elta=(n+e	α(i-iβ*-n))	(i(1 - β*))	$\beta_{actual(\delta > \alpha)}$	_1-((1/i)(g	$h_{(a)}k(0)^{(\delta)}$	-α))	

per-Samuelson	

3. Relat	3. Relationships between quantities: $K_H \& K_F$ and $L_H \& L_F K = (a_{KH}Y_{H})L_{H} + (a_{KF}Y_F)L_F K = a_{KH}Y_{H} + a_{KF}Y_F$										
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			Ун	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} .y _{H)} L	$(a_{LF}, y_F)L_F$	$L=a_{LH}Y_{H}+$	a _{LF} .Y _F		
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	УF	$\boldsymbol{a_{LF}}{=}1/y_F$	L _H &L _F	$Y_H \& Y_F$	$K = K_H + K_F$	$L=L_H+L_F$		
Case 1.	World	1.6394		4.6242	0.21626	1295	5988	9816.33	1294.90		
	H: capital-ample country	2.9199		4.8488	0.20624	388.47	1883.63	5500	388		
	F: labour-ample country		1.0517	4.5279	0.22085	906.43	4104.20	4316	906		
Case 2.	World	1.6394		4.6242	0.21626	1295	5988	9816	1295		
	H: capital-ample country	2.9199		4.8488	0.20624	388.47	1883.63	5500	388		
	F: labour-ample country		1.0517	4.5279	0.22085	906.43	4104.20	4316	906		
Case 3.	World	1.6394		4.6242	0.21626	1295	5988	9816	1295		
	H: capital-ample country	2.9199		4.8488	0.20624	388.47	1883.63	5500	388		
	F: labour-ample country		1.0517	4.5279	0.22085	906.43	4104.20	4316	906		

T9 Case 2	2. Using r	and w wit	h the price	e level	Here, start	from the p	rice level	p>1	Uzav	va [1962]
World=c	apital-am	ple counti	y+labour	-ample co	ountry: W	5988.00	$\Delta Y(0)/Y(0)$	0.00000	A(0) = k(0)	$)^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	S _H (0)	A(0)
0.00755	1294.90	9816.33	541.35	360.90	902.25	5085.75	5987.82	1252.96	711.61	3.4078
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s _Π	s _H	S _{SII/Y}	S _{SH/Y}	w(0)
0.15068	1.63938	0.09191	7.5808	4.6242	0.20925	0.6000	0.13066	0.09041	0.11884	3.9275
H: capita	l-ample c	ountry					$\Delta Y_{H(0)}/Y_{H(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)
0.00755	388.47	5500.00	303.31	202.21	505.52	1525.73	1883.63	700.00	396.69	2.3809
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s _H	S _{STI/Y}	S _{SH/Y}	W _{H(0)}
0.26838	2.91990	0.09191	14.1581	4.8488	0.37162	0.6000	0.25102	0.16103	0.21060	3.9275
F: laour-	ample cou	Using goa	l seek, who	ere r _M app	roaches r=r	F	$\Delta Y_{F(0)}/Y_{F(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)
0.00755	906.43	4316.33	238.04	158.69	396.73	3560.03	4104.20	552.96	314.92	3.8938
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	W _{F(0)}
0.09666	1.05169	0.09191	4.7619	4.5279	0.13473	0.6000	0.08146	0.05800	0.07673	3.9275
For cases	2 and 3, 1	ѓ _н (0) and	Y _F (0) mus	t be given	(without)	using each	$Y_{H(0)}/Y_{F(0)}$	0.45895	Ω	$H(0) > \Omega_{F(0)}$

	Ω^*	I/K	g_K^*	Slope B _K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = 1/\beta^*$
Case 1. World	1.6394	0.1062	0.0703	1.5102	0.0342	0.0226	1.5102	1.0000	1.5102
H: capital-ample country	2.9199	0.1059	0.0829	1.2781	0.0342	0.0267	1.2781	1.0000	1.2781
F: labour-ample country	1.0517	0.1066	0.0594	1.7942	0.0342	0.0190	1.7942	1.0000	1.7942
Case 2. World	1.6394	0.1131	0.0773	1.4631	0.0919	0.0628	1.4631	1.0000	1.4640
H: capital-ample country	2.9199	0.1128	0.1002	1.1259	0.0919	0.0816	1.1259	1.0000	1.2283
F: labour-ample country	1.0517	0.1135	0.0629	1.8050	0.0919	0.0509	1.8050	1.0000	1.7531
Case 3. World	1.6394	0.1062	0.0703	1.5102	0.0342	0.0227	1.5102	1.0000	1.5101
H: capital-ample country	2.9199	0.1059	0.0829	1.2780	0.0342	0.0268	1.2780	1.0000	1.2781
F: labour-ample country	1.0517	0.1066	0.0594	1.7942	0.0342	0.0191	1.7942	1.0000	1.7942

5. The relative pr	5. The relative price level: real vs. nominal (a) Inf or def (b) (c)											
	r(0)	$r=\partial Yt/\partial Kt$	Py=r(0)/r real	r M(0) given	py=rM(0)/r real	r_M^* at β^*	(a)/(b)	r _{CB} given	(a)/(c)			
Case 1. World	0.03416	0.03416	1.0000	0.0330	0.9660	0.0226	1.4589	0.027	1.2222			
H: capital-ample country	0.03416	0.03416	1.0000	0.0330	0.9660	0.0267	1.2347	0.027	1.2222			
F: labour-ample country	0.03416	0.03416	1.0000	0.0330	0.9660	0.0190	1.7332	0.027	1.2222			
Case 2. World	0.09191	0.09191	1.0000	0.0325	0.3536	0.0628	0.5177	0.027	1.2037			
H: capital-ample country	0.09191	0.09191	1.0000	0.0300	0.3264	0.0748	0.4009	0.027	1.1111			
F: labour-ample country	0.09191	0.09191	1.0000	0.0330	0.3590	0.0524	0.6294	0.027	1.2222			
Case 3. World	0.03421	0.03421	1.0000	0.0310	0.9062	0.0227	1.3685	0.027	1.1481			
H: capital-ample country	0.03421	0.03421	1.0000	0.0330	0.9647	0.0268	1.2330	0.027	1.2222			
F: labour-ample country	0.03421	0.03421	1.0000	0.0300	0.8770	0.0191	1.5735	0.027	1.1111			
NL / TC/L 1 1	1 0 /	. n '			14 1 0	· · · ·	ata at		1.0			

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial Yt/\partial Kt = \alpha AtKt^{\alpha^{\alpha}}Lt^{1^{\alpha}}$ and w(real)= $\partial Yt/\partial Lt = (1-\alpha)AtKt^{\alpha}Lt^{\alpha}$

6. Relationships between price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for P_F Stolper-Samuelson For H, $P_H=a_{\rm KH}r_H+a_{\rm LH}w_H$ When real=nominal, the price level is 1.0. The elasticity of substitution is 1.0.

For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	r_H	r_F	W_H	W_F	P_{H}	P_{F}	$p = P_H / P_F$	
Case 1.	World	0.03416		4.3652		1.0000		1.0000	For p,
	H: capital-ample country	0.03416		4.3652		1		1	using goal
	F: labour-ample country		0.03416		4.3652		1		seek
Case 2.	World	0.09191		3.9275		1.0000		1.0000	Y(0)
	H: capital-ample country	0.09191		3.9275		1.17811		1.17811	5988
	F: labour-ample country		0.09191		3.9275		1		5988
Case 3.	World	0.03421		4.3650		1.0000		1.0000	Y(0)
	H: capital-ample country	0.03421		4.3650		1.00009		1.00009	5988
	F: labour-ample country		0.03421		4.3650		1		5988

T9 Case 3	. Using r	and w wit	h the price	level	Here, star	t from the j	orice level		Uzav	va [1962]
World=c	apital-am	ple counti	ry+labour-	ample co	ountry: W	5988.00	$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1294.90	9816.33	201.48	134.32	335.79	5652.21	5987.82	1252.96	1051	4.1276
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	\mathbf{s}_{H}	S _{SII/Y}	S _{SH/Y}	w(0)
0.05608	1.63938	0.03421	7.5808	4.6242	0.20925	0.6000	0.18172	0.03365	0.17560	4.3650
H: capita	l-ample c	ountry					$\Delta Y_{H(0)}/Y_{H(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	388.47	5500.00	112.89	75.26	188.14	1695.66	1883.63	700.00	587.11	3.7211
α	$\Omega_{\rm H}(0)$	$r_{H(0)}$	k(0)	y(0)	s	sΠ	s_{H}	S _{SII/Y}	S _{SH/Y}	W _{H(0)}
0.09988	2.91990	0.03421	14.1581	4.8488	0.37162	0.6000	0.33156	0.05993	0.31169	4.3650
F: laour-a	ample cou	intry					$\Delta Y_{F(0)}/Y_{F(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm F}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	906.43	4316.33	88.59	59.06	147.65	3956.54	4104.20	552.96	464.37	4.2807
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	S _{SH/Y}	w _{F(0)}
0.03598	1.05169	0.03421	4.7619	4.5279	0.13473	0.6000	0.11564	0.02159	0.11314	4.3650
S-S prop	oses that if	f the price	of H good	s rises th	en the pri	ce of F go	$Y_{H(0)}/Y_{F(0)}$	0.45895	Ω	$H(0) > \Omega_{F(0)}$

7. The neutrality of financial assets and	l the coeffcient <i>x=r/w</i>	ke*=Ω*^(1/(1-α))	xe*/x0=k(0)/ke*

	$r_{CB \text{ given}} r_M^*$ at β^*	$r^{*}/r_{M^{*}}$ $c_{CB}=r_{M}^{*}/r_{CB}$	$\alpha_x \qquad x_0 = \alpha_x / k (0)$	ke* $x_e^* = \alpha_x / ke^*$	x_0/x_e^{*}
Case 1. World	0.027 0.0226	1.5102 0.83779	0.0593 0.0078	1.6882 0.0351	0.2227
H: capital-ample country	0.027 0.0267	1.2781 0.98987	0.1108 0.0078	3.2880 0.0337	0.2322
F: labour-ample country	0.027 0.0190	1.7942 0.70518	0.0373 0.0078	1.0537 0.0354	0.2213
			$\alpha_x = \alpha/(1-\alpha)$		
Case 2. World	0.027 0.0628	1.4631 2.32665	0.1774 0.0234	1.7896 0.0991	0.2361
H: capital-ample country	0.027 0.0748	1.1259 3.02353	0.3668 0.0078	4.3259 0.0848	0.0923
F: labour-ample country	0.027 0.0524	1.8050 1.88602	0.1070 0.0078	1.0574 0.1012	0.0773
Case 3. World	0.027 0.0227	1.5102 0.83896	0.0594 0.0078	1.6882 0.0352	0.2224
H: capital-ample country	0.027 0.0268	1.2780 0.99133	0.1110 0.0078	3.2886 0.0337	0.2319
F: labour-ample country	0.027 0.0191	1.7942 0.70612	0.0373 0.0078	1.0537 0.0354	0.2210
Note: When the effect	tive labour is used,	the coefficient, x o an	d x _e , are connected wi	ith ke(0) (see also be	low).

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

o. Data for the fit	cursuel-c	/mm, ivy	DCLYHSKI	per-Samu	icison, ai	iu Leonin	ri paraut	Л	
$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(re;	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$
Case 1. World	7.5808	(Δ(w/r)/(w/r)		4.3652	127.78	0.0078	0.0593	7.5808
H: capital-ample country	14.1581	0.0000	0.0000	#DIV/0!	4.3652	127.79	0.0078	0.1108	14.1581
F: labour-ample country	4.7619	0.0000	0.0000	#DIV/0!	4.3652	127.78	0.0078	0.0373	4.7619
							=α.	$(1-\alpha)=\alpha_x$	=k(0)
Case 2. World	7.5808				3.9275	42.73	0.0234	0.1774	7.5810
H: capital-ample country	14.1581	0.0000	(0.6656)	0.0000	3.9275	42.73	0.0234	0.3313	15.6747
F: labour-ample country	4.7619	0.0000	(0.6656)	0.0000	3.9275	42.73	0.0234	0.1114	4.5725
Case 3. World	7.5808				4.3650	127.60	0.0078	0.0594	7.5810
H: capital-ample country	14.1581	0.0000	(0.0014)	0.0000	4.3650	127.60	0.0078	0.1110	14.1596
F: labour-ample country	4.7619	0.0000	(0.0014)	-0.0006	4.3650	127.60	0.0078	0.0373	4.7619
Note: When the effe	Note: When the effective labour is used, the current wage rate and the profit rate are connected with $k(0)$.								

Note: When the effective labour is used, the current wage rate and the profit rate are connected with k(0). $r=(y_FP_F-y_HP_H)/(\Omega_Fy_F-\Omega_Hy_H)$ $w=(y_Fy_H(\Omega_HP_F-\Omega_FP_H))/(\Omega_Hy_H-\Omega_Fy_F)$ 9. Introduction of relative price level, $p=P_H/P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941]

$r_F = r_F(0) = \partial Y_F / \partial K_F$	$r_{H}(0)_{nominal} = p \cdot (\partial Y_{H} / \partial K_{H}),$	where $p=P_H/P_F$ $w_F=w_F(0)=\partial Y_F/\partial L_F$	$w_{H(0)nominal} = p \cdot (\partial Y_H / \partial L_H)$

	Marginal productivit	y r _{H(marg.pro.)}	r F(margi.Pro.)	W H(margi.Pro.	W _{F(matgi.pro.)}	P_{H}	$P_F = p = P_H / P_F$	Changes (%)
Case 1.	Total	0.03416		4.3652		1.0000	1.0000	for r & w
	H: capital-goods	0.03416		4.3652		1	1	2.4951
	F: consumption-go	ods	0.03416		4.3652		1	1.0013
Case 2.	Total	0.09191		3.9274		1.0000	1.0000	2.6905
	H: capital-goods	0.08523		3.6421		1.0784	1.0784	1.0013
	F: consumption-go	ods	0.09191		3.9275		1	0.8343
Case 3.	Total	0.03421		4.3648		1.0000	1.0000	0.9999
	H: capital-goods	0.03420		4.3646		1.0001	1.0001	0.8997
	F: consumption-go	ods	0.03421		4.3650		1	0.9999

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T10 Case	T10 Case 1. Both countries have different rates of profit and the wage rates									
World=S	+C		BOP	0	Budget	-50	S-I	50	i/s	0.9167
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	ΔK=I	A(0)
0.00755	600	13500	190	145	335	5652	5988	600	550	8.3829
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	i=∆K/Y	w(0)
0.05600	2.25458	0.02484	22.5000	9.9797	0.10020	0.5681	0.09487	0.03181	0.09185	9.4208
S: saving	-oriented	country	BOP	160	Budget	50	S-I	110	i/s	0.7250
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	∆K=I	A(0)
0.00755	200.00	5500.00	131.52	56	187.88	1695.75	1883.63	400.00	290	6.7671
α	$\Omega_{\rm H}(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_H	$s_{S\Pi/Y}$	i=∆K/Y	w(0)
0.09974	2.91990	0.03416	27.5000	9.4181	0.21236	0.7000	0.16551	0.06982	0.15396	8.4787
C: consu	mption-or	iented co	BOP	-160	Budget	-100	S-I	-60	i/s	1.3000
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm F}(0)$	S(0)	∆K=I	A(0)
0.00755	400.00	8000.00	58.98	88.47	147.45	3956.74	4104.20	200.00	260	9.2135
α	$\Omega_{\rm F}(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	i=ΔK/Y	w(0)
0.03593	1.94922	0.01843	20.0000	10.2605	0.04873	0.4000	0.06427	0.01437	0.06335	9.8919
Balance of payment=household saving+government deficit $Y_{H(0)}/Y_{F(0)} = 0.45895$ Uzawa [19]								Uzawa [196	2]:Ω _H >Ω _F	

経常収支が字=国民の貯蓄不足+政府の財政が字

1. Basic variables and parameters under convergence (*delta=alpha*)

	$g_{Y}^{*=}g_{K}^{*}$	$g_A *$	g_y^*	\varOmega^*	<i>r</i> *	i	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
Case 1. World	0.0310	0.0220	0.0233	2.2546	0.0248	0.09185	0.7608	0.00755	0.05600
H: capital-ample country	0.0421	0.0309	0.0343	2.9199	0.0342	0.15396	0.7992	0.00755	0.09974
F: labour-ample country	0.0243	0.0160	0.0166	1.9492	0.0184	0.06335	0.7472	0.00755	0.03593
						adjusting	i by using	$\theta_{1=1.0}$:	
Case 2. World	0.0205	0.0122	0.0129	2.2546	0.0248	0.05845	0.7919	0.00755	0.05600
H: capital-ample country	0.0143	0.0060	0.0067	2.9199	0.0342	0.04778	0.8738	0.00755	0.09974
F: labour-ample country	0.0243	0.0160	0.0166	1.9492	0.0184	0.06335	0.7472	0.00755	0.03593
						adjusting	i by using	$\theta_{1=1.0}$:	
Case 3. World	0.0221	0.0136	0.0144	2.2546	0.0248	0.06346	0.7851	0.00755	0.05600
H: capital-ample country	0.0282	0.0185	0.0205	2.9199	0.0342	0.10087	0.8169	0.00755	0.09974
F: labour-ample country	0.0184	0.0104	0.0108	1.9492	0.0184	0.04629	0.7754	0.00755	0.03593

	g Y(a)	g K(a)	$g_{A(a)}$	g y(a)	delta	$\hat{\beta}_{actual} (\delta > \alpha)$	β*-β	k(0)	y(0)
Case 1. World	0.0800	0.3000	0.0561	0.0718	0.2568		0.9015	22.5000	9.9797
H: capital-ample country	0.0400	0.4000	0.0307	0.0322	0.0221	0.84572	-0.0465	27.5000	9.4181
F: labour-ample country	0.0482	0.4374	0.0252	0.0404	0.4266	-0.28388	1.0311	20.0000	10.2605
For min capital-good	ds growth	0.0248							
Case 2. World	0.0800	0.3000	0.0561	0.0718	0.4186	-1.96699	2.7589	22.5000	9.9797
H: capital-ample country	0.0400	0.4000	-0.0067	0.0322	-0.2984	1.03744	-0.1637	27.5000	9.4181
F: labour-ample country	0.0482	0.4374	0.0252	0.0404	0.4266	-0.28388	1.0311	20.0000	10.2605
Case 3. World	0.0800	0.3000	0.0561	0.0718	0.3795	-1.41939	2.2045	22.5000	9.9797
H: capital-ample country	0.0400	0.4000	-0.0067	0.0322	-0.0303	1.04312	-0.2262	27.5000	9.4181
F: labour-ample country	0.0482	0.6500	0.0176	0.0404	0.6376	-1.30505	2.0804	20.0000	10.2605
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta * - n))/(i(1 - \beta *)) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta < \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha))) \beta_{actual(\delta < \alpha)}$									

3. Relat	3. Relationships between quantities: $K_H \& K_F$ and $L_H \& L_F = K = (a_{KH}y_H)L_H + (a_{KF}y_F)L_F$								a _{KF} .Y _F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			У _Н	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} y _{H)} L _H	$a_{LF}y_F)L_F$	L=a _{LH} .Y _H +a	ILF.YF
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	\mathbf{y}_{F}	$\boldsymbol{a_{LF}}\!\!=\!\!1/y_F$	L _H &L _F	$Y_H \& Y_F$	$K = K_H + K_F$	L=L _H +L _F
Case 1.	World	2.2546		9.9797	0.10020	600	5988	13500	600
	H: capital-ample country	2.9199		9.4181	0.10618	200.00	1883.63	5500	200
	F: labour-ample country		1.9492	10.2605	0.09746	400.00	4104.20	8000	400
Case 2.	World	2.2546		9.9797	0.10020	600	5988	13500	600
	H: capital-ample country	2.9199		9.4181	0.10618	200.00	1883.63	5500	200
	F: labour-ample country		1.9492	10.2605	0.09746	400.00	4104.20	8000	400
	World	2.2546		9.9797	0.10020	600	5988	13500	600
Case 3.	H: capital-ample country	2.9199		9.4181	0.10618	200.00	1883.63	5500	200
	F: labour-ample country		1.9492	10.2605	0.09746	400.00	4104.20	8000	400

T10 Case	2. Using a		5988							
World=S	+C		BOP	0	Budget	-250	S-I	250	i/s	0.5833
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	∆K=I	A(0)
0.00755	600	13500	190	145	335	5652	5988	600	350	8.3829
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	\mathbf{s}_{Π}	s_{H}	$\mathbf{s}_{\mathrm{SII/Y}}$	i=∆K/Y	w(0)
0.05600	2.25458	0.02484	22.5000	9.9797	0.10020	0.5681	0.06037	0.03181	0.05845	9.4208
H: capita	l-ample c	ountry	BOP	160	Budget	-150	S-I	310	i/s	0.2250
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	ΔK=I	A(0)
0.00755	200.00	5500.00	131.52	56	187.88	1695.75	1883.63	400.00	90	6.7671
α	$\Omega_{\rm H}(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	i=∆K/Y	w(0)
0.09974	2.91990	0.03416	27.5000	9.4181	0.21236	0.7000	0.05137	0.06982	0.04778	8.4787
F: laour-a	ample cou	intry	BOP	-160	Budget	-100	S-I	-60	i/s	1.3000
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	ΔK=I	A(0)
0.00755	400.00	8000.00	58.98	88.47	147.45	3956.74	4104.20	200.00	260	9.2135
α	$\Omega_{\rm F}(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_H	$\mathbf{s}_{\mathrm{SII/Y}}$	i=∆K/Y	w(0)
0.03593	1.94922	0.01843	20.0000	10.2605	0.04873	0.4000	0.06427	0.01437	0.06335	9.8919
For cases	2 and 3, Y	í _H (0) and	Y _F (0) use	each equa	tion.		$Y_{H(0)}\!/Y_{F(0)}$	0.45895	Ω	$H(0) > \Omega_{F(0)}$

4. The Penrose curve, B_K , and the assets valuation ratio, v

	Ω^*	I/K	g_{K}^{*}	Slope B _K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. World	2.2546	0.0407	0.0310	1.3144	0.0248	0.0189	1.3144	1.0000	1.3144
H: capital-ample country	2.9199	0.0527	0.0421	1.2512	0.0342	0.0273	1.2512	1.0000	1.2512
F: labour-ample country	1.9492	0.0325	0.0243	1.3383	0.0184	0.0138	1.3383	1.0000	1.3383
Case 2. World	2.2546	0.0259	0.0310	0.8364	0.0248	0.0297	0.8364	1.0000	1.2628
H: capital-ample country	2.9199	0.0164	0.0421	0.3883	0.0342	0.0880	0.3883	1.0000	1.1445
F: labour-ample country	1.9492	0.0325	0.0243	1.3383	0.0184	0.0138	1.3383	1.0000	1.3383
Case 3. World	2.2546	0.0281	0.0310	0.9081	0.0248	0.0274	0.9081	1.0000	1.2736
H: capital-ample country	2.9199	0.0345	0.0421	0.8198	0.0342	0.0417	0.8198	1.0000	1.2242
F: labour-ample country	1.9492	0.0238	0.0243	0.9780	0.0184	0.0188	0.9780	1.0000	1.2897

5. The relative pr	ice level:	real vs. 1	nominal	(a)	Inf or def	(b)		(c)	
	r(0)	r=əYt/əKt	Py=r(0)/r real	r M(0) given	$p_{Y}=r_{M(0)}/r_{rea}$	r_M^* at β^*	(a)/(b)	r CB given	(a)/(c)
Case 1. World	0.02484	0.02484	1.0000	0.0330	1.3285	0.0189	1.7462	0.027	1.2222
H: capital-ample country	0.03416	0.03416	1.0000	0.0330	0.9660	0.0273	1.2087	0.027	1.2222
F: labour-ample country	0.01843	0.01843	1.0000	0.0330	1.7904	0.0138	2.3961	0.027	1.2222
Case 2. World	0.02484	0.02484	1.0000	0.0325	1.3084	0.0197	1.6522	0.027	1.2037
H: capital-ample country	0.03416	0.03416	1.0000	0.0300	0.8782	0.0298	1.0051	0.027	1.1111
F: labour-ample country	0.01843	0.01843	1.0000	0.0330	1.7904	0.0138	2.3961	0.027	1.2222
Case 3. World	0.02484	0.02484	1.0000	0.0310	1.2480	0.0195	1.5895	0.027	1.1481
H: capital-ample country	0.03416	0.03416	1.0000	0.0330	0.9660	0.0279	1.1826	0.027	1.2222
F: labour-ample country	0.01843	0.01843	1.0000	0.0300	1.6276	0.0143	2.0992	0.027	1.1111
Note: If the price lev	el of outp	ut, P_{γ} , is o	one, real=n	ominal ar	d the elastic	city of subs	stitution,	σ , is alway	s 1.0.

6. Relationships between price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for P_F Stolper-Samuelson

For H, $P_{H}=a_{KH}r_{H}+a_{LH}w_{H}$ When real=nominal, the price level is 1.0. The elasticity of substitution is 1.0.

For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	\mathbf{r}_{H}	$r_{\rm F}$	\mathbf{w}_{H}	\mathbf{w}_{F}	\mathbf{P}_{H}	$\mathbf{P}_{\mathbf{F}}$	$p=P_H/P_F$	
Case 1.	World	0.02484		9.4208		1.0000		1.0000	For p,
	H: capital-ample country	0.03416		8.4787		1		1 1	using goal
	F: labour-ample country		0.01843		9.8919				seek
Case 2.	World	0.02484		9.4208		1.0000		1.0000	Y(0)
	H: capital-ample country	0.03416		8.4787		1		1 1	5988
	F: labour-ample country		0.01843		9.8919				5988
Case 3.	World	0.02484		9.4208		1.0000		1.0000	Y(0)
	H: capital-ample country	0.03416		8.4787		1		1 1	5988
	F: labour-ample country		0.01843		9.8919				5988

T10 Case 3. Usin	g r and w wi			D 1	1.50	<u> </u>	22.0	5988	0 (000
World=S+C	77 (0)	BOP	70	Budget	-150	S-I	220	i/s	0.6333
n L(0)	K(0)	$S_{II}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	∆K=I	A(0)
0.00755 60		190	145	335	5652	5988	600	380	8.3829
α Ω(0)		k(0)	y(0)	\$ 0.10020	S _Π	S _H	S _{SII/Y}	i=ΔK/Y	w(0)
0.05600 2.2545		22.5000 BOP	9.9797	0.10020	0.5681	0.06555 S-I	0.03181	0.06346	9.4208
H: capital-ample			160 D(0)	Budget	-50	$\frac{S-1}{Y_{H}(0)}$	210 S(0)	i/s	0.4750
n L(0)	K(0)	$S_{\Pi}(0)$		Π(0)	W(0)			$\Delta K = I$	A(0)
0.00755 200.0		131.52	56	187.88	1695.75	1883.63	400.00	190	6.7671
$\alpha \qquad \Omega_{\rm H}(0)$		k(0)	y(0)	s	\$∏ 0.7000	S _H	S _{SII/Y}	i=ΔK/Y	w(0)
0.09974 2.9199		27.5000	9.4181	0.21236	0.7000	0.10844	0.06982	0.10087	8.4787
F: laour-ample c		BOP	-90	Budget	-100	S-I	10	i/s	0.9500
n L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	∆K=I	A(0)
0.00755 400.0		58.98	88.47	147.45	3956.74	4104.20	200.00	190	9.2135
$\alpha \qquad \Omega_{\rm F}(0)$		k(0)	y(0)	S	SΠ	s_{H}	$s_{S\Pi/Y}$	i=∆K/Y	w(0)
0.03593 1.9492		20.0000	10.2605	0.04873	0.4000	0.04697	0.01437	0.04629	9.8919
$P_{H} = \Omega_{H} \cdot r_{H} + (1/y_{H}) v_{H}$	v _H	$P_F = \Omega_F \cdot r_F +$	$(1/y_F)W_F$			$Y_{H(0)}/Y_{F(0)}$	0.45895	Ω	$H(0) > \Omega_{F(0)}$
7. The neutrali	ty of financ	ial assets	and the c	oeffcient	x=r/w	ke*=Ω	^{∗∧} (1/(1−α))	x _e */x	$k_0 = k(0)/k_0$
	r _{CB} given	r_M^* at β^*	$r^{*/r}_{M^{*}}$	c _{CB} =r _M */r _{CB}	α_x	$x_0 = \alpha_x / k (\theta$	ke*	$x_e^* = \alpha_x / k e^*$	x_0/x_e^*
Case 1. World	0.027	0.0189	1.3144	0.69994	0.0593	0.0026	2.3660	0.0251	0.1052
I: capital-ample coun	try 0.027	0.0273	1.2512	1.01118	0.1108	0.0040	3.2880	0.0337	0.1196
F: labour-ample count	ry 0.027	0.0138	1.3383	0.51008	0.0373	0.0019	1.9983	0.0186	0.0999
					$\alpha_x = \alpha/(1-\alpha)$)			
Case 2. World	0.027	0.0197	0.8364	1.09990	0.0593	0.0026	2.3660	0.0251	0.1052
H: capital-ample coun	try 0.027	0.0298	0.3883	3.25823	0.1108	0.0040	3.2880	0.0337	0.119
F: labour-ample count	ry 0.027	0.0138	1.3383	0.51008	0.0373	0.0019	1.9983	0.0186	0.0999
Case 3. World	0.027	0.0195	0.9081	1.01307	0.0593	0.0026	2.3660	0.0251	0.1052
H: capital-ample coun		0.0279	0.8198	1.54337	0.1108	0.0040	3.2880	0.0337	0.1196
F: labour-ample count		0.0143	0.9780	0.69801	0.0373	0.0019	1.9983	0.0186	0.0999
Note: When the e									
8. Data for the	Hecksher-(bczynski,	the Stol	per-Samu	uelson, ar	nd Leonti	ef parado	
$P_{M}/P_{F}=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)		r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$
Case 1. World	22.5000		w/r)/(w/r)		9.4208	379.27	0.0026	0.0593	22.500
I: capital-ample coun		0.0000	0.0000	#DIV/0!	8.4787	248.21	0.0040	0.1108	27.500
?: labour-ample count	ry 20.0000	0.0000	0.0000	#DIV/0!	9.8919	536.68	0.0019	0.0373	20.000
							=0	$(1-\alpha)=\alpha_x$	=k(0)
Case 2. World	22.5000				9.4208	379.27	0.0026	0.0593	22.500
H: capital-ample coun	try 27.5000	0.0000	0.0000	#DIV/0!	8.4787	248.21	0.0040	0.1108	27.500
7: labour-ample count	ry 20.0000	0.0000	0.0000	#DIV/0!	9.8919	536.68	0.0019	0.0373	20.000
Case 3. World	22.5000				9.4208	379.27	0.0026	0.0593	22.500
I: capital-ample count		0.0000	0.0000	#DIV/0!	8.4787	248.21	0.0040	0.1108	27.500
F: labour-ample count		0.0000	0.0000	#DIV/0!	9.8919	536.68	0.0019	0.0373	20.000
T / TT / /	ffective labor	ir is used t	he current	wage rate	and the pr	ofit rate ar	e connecte	d with k(0)).
	ffective labor	ir is used if	he current	wage rate	and the pr	ofit rate ar	e connecte	d with k(0)). –

9. Introduction of relative price level, $p=P_H/P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941] $r_F=r_F(0)=\Im F_F/\Im K_F$ $r_H(0)_{nominal}=p(\Im Y_H/\Im K_H)$, where $p=P_H/P_F$ $w_F=w_F(0)=\Im F_F/\Im L_F$ $w_{H(0)nominal}=p(\Im Y_H/\Im L_H)$

	Marginal productivity	r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	$P_F = p$	$=P_H/P_F$	Changes (%)
Case 1.	World	0.02484		9.4208		1.0000		1.0000	for r & w
	H: capital-ample country	0.03416		8.4787		1		1	1.0000
	F: labour-ample country		0.01843		9.8919		1		1.0000
Case 2.	World	0.02484		9.4208		1.0000		1.0000	1.0000
	H: capital-ample country	0.03416		8.4787		1.0000		1.0000	1.0000
	F: labour-ample country		0.01843		9.8919		1		1.0000
Case 3.	World	0.02484		9.4208		1.0000		1.0000	1.0000
	H: capital-ample country	0.03416		8.4787		1.0000		1.0000	1.0000
	F: labour-ample country		0.01843		9.8919		1		1.0000

T11 Case	1. Both c	ountries h	ave differ	ent rates o	of profit a	nd the wa	ge rates		5988	p>1
World=S	+C		BOP	0	Budget	-50	S-I	50	i/s	0.9167
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	ΔK=I	A(0)
0.00755	600	13500	190	145	335	5652	5988	600	550	8.3829
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	$s_{S\Pi/Y}$	i=ΔK/Y	w(0)
0.05600	2.25458	0.02484	22.5000	9.9797	0.10020	0.5681	0.09487	0.03181	0.09185	9.4208
S: saving	-oriented	country	BOP	160	Budget	50	S-I	110	i/s	0.7250
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	ΔK=I	A(0)
0.00755	200.00	5500.00	131.52	56	187.88	1695.75	1883.63	400.00	290	6.7671
α	$\Omega_{\rm H}(0)$	r(0)	k(0)	y(0)	s	sΠ	s_{H}	$s_{S\Pi/Y}$	i=∆K/Y	w(0)
0.09974	2.91990	0.03416	27.5000	9.4181	0.21236	0.7000	0.16551	0.06982	0.15396	8.4787
C: consu	mption-or	iented co	BOP	-160	Budget	-100	S-I	-60	i/s	1.3000
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	ΔK=I	A(0)
0.00755	400.00	8000.00	58.98	88.47	147.45	3956.74	4104.20	200.00	260	9.2135
α	$\Omega_{\rm F}(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_H	$s_{S\Pi/Y}$	i=ΔK/Y	w(0)
0.03593	1.94922	0.01843	20.0000	10.2605	0.04873	0.4000	0.06427	0.01437	0.06335	9.8919
Balance o	f payment⁼	=household	l saving+g	overnment	deficit		Y _{H(0)} /Y _{F(0)}	0.45895	Uzawa [196	2]:Ω _H >Ω _F

経常収支赤字=国民の貯蓄不足+政府の財政赤字

1. Basic variables and parameters under convergence (delta=alpha)

	$g_{Y}^{*=}g_{K}^{*}$	$g_A *$	g_y^*	\varOmega^*	r^*	i	$\beta^{*}_{(\delta=\alpha)}$	n	α
Case 1. World	0.0310	0.0220	0.0233	2.2546	0.0248	0.09185	0.7608	0.00755	0.05600
H: capital-ample country	0.0421	0.0309	0.0343	2.9199	0.0342	0.15396	0.7992	0.00755	0.09974
F: labour-ample country	0.0243	0.0160	0.0166	1.9492	0.0184	0.06335	0.7472	0.00755	0.03593
						adjusting	i by using	$\theta_{I=I.0}$:	
Case 2. World	0.0216	0.0097	0.0140	2.2689	0.1333	0.05882	0.8343	0.00755	0.30252
H: capital-ample country	0.0147	0.0045	0.0071	2.7500	0.1333	0.04500	0.8998	0.00755	0.36667
F: labour-ample country	0.0259	0.0133	0.0182	2.0253	0.1333	0.06582	0.7977	0.00755	0.27004
						adjusting	i by using	$\theta_{1=1.0}$:	
Case 3. World	0.0254	0.0056	0.0177	2.0611	0.3313	0.05802	0.9030	0.00755	0.68290
H: capital-ample country	0.0324	0.0051	0.0247	2.3913	0.3313	0.08261	0.9380	0.00755	0.79232
F: labour-ample country	0.0211	0.0050	0.0134	1.8824	0.3313	0.04471	0.8870	0.00755	0.62369

	g Y(a)	$g_{K(a)}$	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	β*-β	k(0)	y(0)
Case 1. World	0.0800	0.3000	0.0561	0.0718	0.2568	-0.14069	0.9015	22.5000	9.9797
H: capital-ample country	0.0400	0.4000	0.0307	0.0322	0.0221	0.84572	-0.0465	27.5000	9.4181
F: labour-ample country	0.0482	0.4374	0.0252	0.0404	0.4266	-0.28388	1.0311	20.0000	10.2605
For min capital-good	ds growth	0.0248							
Case 2. World	0.0800	0.3000	-0.0160	0.0718	-8.3114	1.00000	-0.1657	22.5000	9.9167
H: capital-ample country	0.0400	0.4000	-0.1114	0.0322 ·	27.7657	1.00000	-0.1002	27.5000	10.0000
F: labour-ample country	0.0474	-4.6674	1.3023	0.0396	-4.6399	0.99999	-0.2023	20.0000	9.8750
Case 3. World	0.0800	0.3000	-0.1273	0.0718	-80.8877	1.00000	-0.0970	22.5000	10.9167
H: capital-ample country	0.0400	0.4000	-0.2785	0.0322 ·	-120.265	1.00000	-0.0620	27.5000	11.5000
F: labour-ample country	0.0469	-75.4719	47.1148	0.0390	-74.9141	1.00000	-0.1130	20.0000	10.6250
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	α)n	delta=(n+	α(i-iβ*-n))/	$(i(1-\beta^*))$	$\beta_{actual(\delta > \alpha)}$	=1-((1/i)(gA	_(a) k(0)^(δ	-α))	

3. Relat	ionships between q	uantities	s: K _H & K	$X_{\rm F}$ and $L_{\rm I}$	հ & L _F	K=(a _{KH} .y _{H)} L	H+(a _{KF} .y _F)L _F	K=a _{KH} .Y _H +	a _{KF} .Y _F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			У _Н	$\boldsymbol{a_{LH}}{=}1/\boldsymbol{y_{H}}$	L=(a _{LH} .y _H)L	$(a_{LF}, y_F)L_F$	L=a _{LH} .Y _H +	a _{LF} .Y _F
For L,	$a_{LH} = 1/y_H$ $a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	УF	$\boldsymbol{a_{LF}}{=}1/y_F$	L _H &L _F	$Y_H \& Y_F$	K=K _H +K _I	$L=L_H+L_F$
Case 1.	World	2.2546		9.9797	0.10020	600	5988	13500	600
	H: capital-ample country	2.9199		9.4181	0.10618	200.00	1883.63	5500	200
	F: labour-ample country		1.9492	10.2605	0.09746	400.00	4104.20	8000	400
Case 2.	World	2.2689		9.9167	0.10084	600	5950	13500	600
	H: capital-ample country	2.7500		10.0000	0.10000	200.00	2000.00	5500	200
	F: labour-ample country		2.0253	9.8750	0.10127	400.00	3950.00	8000	400
	World	2.0611		10.9167	0.09160	600	6550	13500	600
Case 3.	H: capital-ample country	2.3913		11.5000	0.08696	200.00	2300.00	5500	200
	F: labour-ample country		1.8824	10.6250	0.09412	400.00	4250.00	8000	400

T11 Case	2 Using 1	· and w wi	th the prid	re level					5925	
World=S		and 0 00	BOP	0	Budget	-250	S-I	250	i/s	0.5833
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	ΔK=I	A(0)
0.00755	600	13500	940	860	1800.00	4125.00	5950.00	600	350	3.8664
α	$\Omega(0)$	r(0)	k(0)	y(0)	S	s _Π	s _H	S _{SII/Y}	i=∆K/Y	w(0)
0.30252	2.26891	0.13333	22.5000	9.9167	0.10084	0.5222	0.06986	0.15798	0.05882	6.8750
II. comito	1 1		DOD	1.00	D 1 .	1.50	0.1	210	• 7	0.0050
H: capita	l-ample c	ountry	BOP	160	Budget	-150	S-I	310	i/s	0.2250
n: capita	L(0)	ountry K(0)	ВОР S _П (0)	D(0)	Budget Π(0)	-150 W(0)	$\frac{S-I}{Y_{H}(0)}$	S(0)	$\Delta K = I$	0.2250 A(0)
					6					
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	Y _H (0)	S(0)	ΔK=I	A(0)
n 0.00755	L(0) 200.00	K(0) 5500.00	S _П (0) 513.33	D(0) 220	П(0) 733.33	W(0) 1375.00	Y _H (0) 2000.00	S(0) 400.00	ΔK=I 90	A(0) 2.9665
n 0.00755 α 0.36667	L(0) 200.00 Ω _H (0)	K(0) 5500.00 r(0) 0.13333	S _Π (0) 513.33 k(0)	D(0) 220 y(0)	П(0) 733.33 s	W(0) 1375.00 s _П	Y _H (0) 2000.00 s _H	S(0) 400.00 s _{SП/Y}	Δ K=I 90 i=ΔK/Y	A(0) 2.9665 w(0)

s

9.8750 0.05063

640.00 1066.67 2750.00 3950.00

 \mathbf{S}_{Π}

0.4000

200.00

S_{SII/Y}

 \mathbf{s}_{H}

0.07379 0.10802

260

i=∆K/Y

0.06582

4.3975

w(0)

6.8750

 $\Omega_{H(0)} > \Omega_{F(0)}$

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4. The Penrose curve, B_K , and the assets valuation ratio, v

426.67

y(0)

For cases 2 and 3, $Y_{H}(0)$ and $Y_{F}(0)$ must be given (without using eac $Y_{H(0)}/Y_{F(0)}$ 0.50633

k(0)

20.0000

400.00 8000.00

r(0)

 $\Omega_{\rm F}(0)$

0.27004 2.02532 0.13333

0.00755

α

	Ω^*	I/K	g _K *	Slope B_K	r*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. World	2.2546	0.0407	0.0310	1.3144	0.0248	0.0189	1.3144	1.0000	1.3144
H: capital-ample country	2.9199	0.0527	0.0421	1.2512	0.0342	0.0273	1.2512	1.0000	1.2512
F: labour-ample country	1.9492	0.0325	0.0243	1.3383	0.0184	0.0138	1.3383	1.0000	1.3383
Case 2. World	2.2689	0.0259	0.0393	0.6600	0.1342	0.2033	0.6600	1.0000	1.1986
H: capital-ample country	2.7500	0.0164	0.0567	0.2885	0.1333	0.4622	0.2885	1.0000	1.1114
F: labour-ample country	2.0253	0.0325	0.0297	1.0960	0.1333	0.1216	1.0960	1.0000	1.2536
Case 3. World	2.0611	0.0281	0.0774	0.3639	0.3029	0.8324	0.3639	1.0000	1.1074
H: capital-ample country	2.3913	0.0345	0.1575	0.2193	0.3313	1.5107	0.2193	1.0000	1.0661
F: labour-ample country	1.8824	0.0238	0.0504	0.4710	0.3313	0.7035	0.4710	1.0000	1.1273

5. The relative pri	ice level:	real vs. 1	nominal	(a)	Inf or def	(b)		(c)	
	r(0)	r=əYt/əKt	Py=r(0)/r real	r M(0) given	py=rM(0)/r rea	r_M^* at β^*	(a)/(b)	r _{CB} given	(a)/(c)
Case 1. World	0.02484	0.02484	1.0000	0.0330	1.3285	0.0189	1.7462	0.027	1.2222
H: capital-ample country	0.03416	0.03416	1.0000	0.0330	0.9660	0.0273	1.2087	0.027	1.2222
F: labour-ample country	0.01843	0.01843	1.0000	0.0330	1.7904	0.0138	2.3961	0.027	1.2222
Case 2. World	0.13333	0.13333	1.0000	0.0325	0.2438	0.1119	0.2903	0.027	1.2037
H: capital-ample country	0.13333	0.13333	1.0000	0.0300	0.2250	0.1200	0.2501	0.027	1.1111
F: labour-ample country	0.13333	0.13333	1.0000	0.0330	0.2475	0.1064	0.3103	0.027	1.2222
Case 3. World	0.33133	0.33133	1.0000	0.0310	0.0936	0.2735	0.1133	0.027	1.1481
H: capital-ample country	0.33133	0.33133	1.0000	0.0330	0.0996	0.3108	0.1062	0.027	1.2222
F: labour-ample country	0.33133	0.33133	1.0000	0.0300	0.0905	0.2939	0.1021	0.027	1.1111
Note: If the price lev	el of outp	ut, P_{γ} , is	one, real=n	ominal an	d the elastic	ity of sub	stitution,	σ , is alway	s 1.0.

6. Relationships between	price levels: r _H	& w_H for	P_H and r_F	& w_F for P_F	Stolper-Samuelson

For H,	$P_H = a_{KH} r_H + a_{LH} w_H$	When real=	nominal, th	e price level	l is 1.0.	The el	asticit	y of	substitut	tion is 1.0.
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	$r_{\rm H}$	$r_{\rm F}$	\mathbf{w}_{H}	\mathbf{w}_{F}	\mathbf{P}_{H}	$\mathbf{P}_{\mathbf{F}}$	p⁼	$=P_H/P_F$	
Case 1.	World	0.02484		9.4208		1.0000			1.0000	For p,
	H: capital-ample country	0.03416		8.4787		1		1	1	using goal
	F: labour-ample country		0.01843		9.8919					seek
Case 2.	World	0.13333		6.8750		0.9958			0.9958	Y(0)
	H: capital-ample country	0.13333		6.8750		1.1			1.1	5925
	F: labour-ample country		0.13333		6.8750			1		5950
Case 3.	World	0.33133		3.9983		1.0492			1.0492	Y(0)
	H: capital-ample country	0.33133		3.9983		1.14			1.14	6872
	F: labour-ample country		0.33133		3.9983			1		6550

T11 Case	3. Using r	and w wi	th the pri	ce level					6872	
World=S	+C		BOP	70	Budget	-150	S-I	220	i/s	0.6333
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	∆K=I	A(0)
0.00755	600	13500	2336	2137	4473.00	2399.00	6550.00	600	380	1.3022
α	$\Omega(0)$	r(0)	k(0)	y(0)	S	sΠ	s_{H}	S _{SII/Y}	i=ΔK/Y	w(0)
0.68290	2.06107	0.33133	22.5000	10.9167	0.09160	0.5222	0.09017	0.35663	0.05802	3.9983
H: capita	l-ample co	ountry	BOP	160	Budget	-50	S-I	210	i/s	0.4750
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	∆K=I	A(0)
0.00755	200.00	5500.00	1275.63	547	1822.33	799.67	2300.00	400.00	190	0.8323
α	$\Omega_{\rm H}(0)$	r(0)	k(0)	y(0)	S	sΠ	s _H	S _{SII/Y}	i=ΔK/Y	w(0)
0.79232	2.39130	0.33133	27.5000	11.5000	0.17391	0.7000	0.18548	0.55462	0.08261	3.9983
F: laour-a	ample cou	ntry	BOP	-90	Budget	-100	S-I	10	i/s	0.9500
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	∆K=I	A(0)
0.00755	400.00	8000.00	1060.27	1590.40	2650.67	1599.33	4250.00	200.00	190	1.6402
α	$\Omega_{\rm F}(0)$	r(0)	k(0)	y(0)	S	sΠ	\mathbf{s}_{H}	s _{SΠ/Y}	i=∆K/Y	w(0)
0.62369	1.88235	0.33133	20.0000	10.6250	0.04706	0.4000	0.05957	0.24947	0.04471	3.9983
$P_{H} = \Omega_{H} \cdot r_{H}$	+(1/y _H)w _H		$P_F = \Omega_F \cdot r_F +$	$(1/y_F)w_F$			Y _{H(0)} /Y _{F(0)}	0.54118	Ω	$H(0) > \Omega_{F(0)}$
7. The ne	eutrality	of financ	ial assets	and the o	coeffcient	x=r/w	ke*=Ω*	*^(1/(1-α))	x.*/x	$k_0 = k(0)/ke$
		I' CR miyan	r_M^* at β^*	r*/r _{M*}	c _{CB} =r _M */r _{CB}	α_x	$x_0 = \alpha_x / k(0)$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_e^*
Case 1.	World	0.027	0.0189	1.3144	0.69994	0.0593	0.0026	2.3660	0.0251	0.1052
	nple country	0.027	0.0273	1.2512	1.01118	0.1108	0.0040	3.2880	0.0337	0.1196
F: labour-an	ple country	0.027	0.0138	1.3383	0.51008	0.0373	0.0019	1.9983	0.0186	0.0999
						$\alpha_x = \alpha/(1-\alpha)$)			
Case 2.	World	0.027	0.1119	0.6600	7.53023	0.4337	0.0193	3.2370	0.1340	0.1439
H: capital-ar	mple country	0.027	0.1200	0.2885	########	0.5789	0.0040	4.9395	0.1172	0.0344
F: labour-an	ple country	0.027	0.1064	1.0960	4.50553	0.3699	0.0019	2.6295	0.1407	0.0132
Case 3.	World	0.027	0.2735	0.3639	########	2.1536	0.0026	9.7840	0.2201	0.0120
H: capital-ar	nple country	0.027	0.3108	0.2193	#######	3.8151	0.0040	66.5510	0.0573	0.0703
F: labour-an		0.027	0.2939	0.4710	########	1.6574	0.0019	5.3701	0.3086	0.0060
									see also be	
8. Data f	or the He	cksher-O		bczynski,	, the Stol	per-Samu	ielson, ar	id Leonti	ef parado	
$p = P_M / P_F =$		k(0)	$\Delta k/k(0)$		sigma	w(0)		r(0)/w(0)	k/(w/r)	$\alpha_{\rm x}({\rm w/r})$
Case 1.	World	22.5000		w/r)/(w/r)		9.4208	379.27	0.0026	0.0593	22.5000
H: capital-ar	mple country	27.5000	0.0000	0.0000	#DIV/0!	8.4787	248.21	0.0040	0.1108	27.5000
f: labour-an	ple country	20.0000	0.0000	0.0000	#DIV/0!	9.8919	536.68	0.0019	0.0373	20.0000
								=0	α_x	=k(0)
Case 2.	World	22.5000				6.8750	51.56	0.0194	0.4364	22.364
H: capital-ar	mple country	27.5000	0.0000	(0.7923)	0.0000	6.8750	51.56	0.0194	0.5333	29.8520
F: labour-an	ple country	20.0000	0.0000	(0.9039)	0.0000	6.8750	51.56	0.0194	0.3879	19.075
Case 3.	World	22.5000				3.9983	12.07	0.0829	1.8645	25.9882
H: capital-ar	nple country	27.5000	0.0000	(0.9514)	0.0000	3.9983	12.07	0.0829	2.2789	46.0380
C. 1.1	ple country	20.0000	0.0000	(0.9775)	0.0000	3.9983	12.07	0.0829	1.6574	20.0000
: labour-an	ipic country	20.0000	0.0000	(0.775)	0.0000	5.7765	12.07	0.062)	1.0574	20.0000

9. Introduction of relative price level, p=P_H/P_F: Duality [Jones, R. W., 1965] S-Samuelson [1941]

 $\mathbf{r}_{F} = \mathbf{r}_{F}(0) = \partial \mathbf{Y}_{F} / \partial \mathbf{K}_{F} \quad \mathbf{r}_{H}(0)_{nominal} = \mathbf{p} \cdot (\partial \mathbf{Y}_{H} / \partial \mathbf{K}_{H}), \text{ where } \mathbf{p} = \mathbf{P}_{H} / \mathbf{P}_{F} \quad \mathbf{w}_{F} = \mathbf{w}_{F}(0) = \partial \mathbf{Y}_{F} / \partial \mathbf{L}_{F} \quad \mathbf{w}_{H(0)nominal} = \mathbf{p} \cdot (\partial \mathbf{Y}_{H} / \partial \mathbf{L}_{H})$

	Marginal productivity r _{H(marg.pro}) r _{F(margi.Pro.)}	W H(margi.Pro. W F(matgi.pro.	P_{H}	$P_F = p = P_H / P_F$	Changes (%)
Case 1.	World 0.02484		9.4208	1.0000	1.0000	for r & w
	H: capital-ample country 0.03416		8.4787	1	1	3.7026
	F: labour-ample country	0.01843	9.8919		1	8.5083
Case 2.	World 0.13390		6.9040	0.9958	0.9958	7.2339
	H: capital-ample country 0.12648		6.5217	1.0542	1.0542	17.9763
	F: labour-ample country	0.13333	6.8750		1	0.7692
Case 3.	World 0.31581		3.8110	1.0492	1.0492	0.4137
•	H: capital-ample country 0.29064		3.5073	1.1400	1.1400	0.6950
	F: labour-ample country	0.33133	3.9983		1	0.4042

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			ve differen sumption		profit and =H+F	l the wage	rates			llay [1960] D) ^{1-α} /Ω(0)
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	616	316	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_H	S _{SII/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.10013	0.6000	0.05400	0.04876	0.05137	4.3645
H: capita	l-goods	0.3	s=S/Y	0.10013	0.36	0.39		0.33		
n	L(0)	K(0)	S _Π (0)	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	129.67	2944.80	126.00	54	180.00	2204.28	2384.28	203.28	77.28	14.5257
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	W _{H(0)}
0.07549	1.23509	0.06112	22.7102	18.3875	0.08526	0.7000	0.03422	0.05285	0.03241	16.9994
F: consu	mption-go	oods	1-s	0.89987						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1165.33	6871.20	174.00	146.00	320.00	3447.72	3767.72	412.72	238.72	2.7809
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	\mathbf{s}_{H}	$\mathbf{s}_{S\Pi/Y}$	s _{SH/Y}	W _{F(0)}
0.08493	1.82370	0.04657	5.8963	3.2332	0.10954	0.5438	0.06643	0.04618	0.06336	2.9586
Cases corr	respond w	ith Hecksh	er-Ohlin b	y region.			$Y_{H(0)}/Y_{F(0)}$	0.63282	Ω	$H_{(0)} < \Omega_{F(0)}$

1. Basic variables and parameters under convergence (delta=	alnha)
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	$g_{Y}^{*=}g_{K}^{*}$	g_A^*	g_y^*	\varOmega^*	r*	i	$\beta^*_{(\delta=\alpha)}$	п	α
Case 1. Total	0.0386	0.0283	0.0308	1.5956	0.0509	0.08986	0.6851	0.00755	0.08127
H: capital-goods	0.0398	0.0296	0.0320	1.2351	0.0611	0.07878	0.6242	0.00755	0.07549
F: consumption-goo	0.0380	0.0276	0.0302	1.8237	0.0466	0.09687	0.7148	0.00755	0.08493
Case 2. Total	0.0386	0.0283	0.0308	1.5956	0.0509	0.08986	0.6851	0.00755	0.08127
H: capital-goods	0.0360	0.0267	0.0282	1.0136	0.0509	0.06320	0.5768	0.00755	0.05163
F: consumption-goo	0.0397	0.0287	0.0319	1.9490	0.0509	0.10604	0.7292	0.00755	0.09927
Case 3. Total	0.0387	0.0284	0.0309	1.6107	0.0509	0.09071	0.6871	0.00755	0.08204
H: capital-goods	0.0571	0.0420	0.0492	2.2986	0.0638	0.17324	0.7577	0.00755	0.14665
F: consumption-goo	0.0322	0.0228	0.0244	1.4276	0.0454	0.06874	0.6678	0.00755	0.06485

at Dusie fullables	and para	meters a	maer ene	current o	ituation.	(uenus u	pina /		
	g Y(a)	$g_{K(a)}$	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.1146		0.2647	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0292	0.0322	0.1379	0.54990	0.0743	22.7102	18.3875
F: consumption-goo	-0.0703	0.1053	-0.0862	-0.0773	0.0970	1.90875	-1.1940	5.8963	3.2332
For min capital goo	od growth	0.0509							
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.1146	0.42042	0.2647	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0122	0.0322	0.2341	0.67260	-0.0958	18.1682	17.9248
F: consumption-goo	-0.0645	0.0266	-0.0740	-0.0715	0.0189	1.60086	-0.8717	6.4017	3.2847
-									
Case 3. Total	0.0800	0.3000	0.0485	0.0718	0.1108	0.43373	0.2534	7.5799	4.7060
H: capital-goods	0.0400	0.4000	-0.0251	0.0322	-0.1859	1.06348	-0.3058	11.9609	5.2036
F: consumption-goo	0.0451	0.2203	0.0237	0.0372	0.2112	0.54597	0.1218	6.5515	4.5892
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	α)n	delta=(n+	α(i-iβ*-n))	/(i(1-β*))	$B_{actual(\delta > \alpha)}$	=1-((1/i)(g/	_(a) k(0)^(δ	-α))	
								Hecksche	r-Ohlin

								Hecksche	r-Ohlin
3. Relat	ionships between o	quantities	s: K _H & I	K _F and I	$L_H \& L_F$	K=(a _{KH} .y _{H)} L	H+(a _{KF} .y _F)L _F	$K = a_{KH} Y_{H} +$	a _{KF} .Y _F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$]		Ун	$a_{LH}{=}1/y_{\rm H}$	$L=(a_{LH}y_{H})L_{H}$	$(a_{LF},y_F)L_F$	$L=a_{LH}Y_{H}+$	a _{LF} .Y _F
For L,	$a_{LH}=1/y_{H}$ $a_{LF}=1/y_{F}$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	$y_{\rm F}$	$\boldsymbol{a_{LF}}{=}1/\boldsymbol{y_{F}}$	L _H &L _F	$Y_H \& Y_F$	$K = K_H + K_F$	$L=L_H+L_F$
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.2351		18.3875	0.05438	129.67	2384.28	2945	130
	F: consumption-goo	ods	1.8237	3.2332	0.30929	1165.33	3767.72	6871	1165
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.0136		17.9248	0.05579	129.67	2324.29	2356	130
	F: consumption-goo	ods	1.9490	3.2847	0.30445	1165.33	3827.71	7460	1165
Case 3.	Total	1.6107		4.7060	0.21250	1295	6094	9816	1295
	H: capital-goods	2.2986		5.2036	0.19217	246.20	1281.14	2945	246
	F: consumption-goo	ods	1.4276	4.5892	0.21790	1048.80	4813.11	6871	1049

		eases in ca	• ••							llay [1960]
Country=	=capital-g	oods+con	sumption	-goods: T	H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$D^{1-\alpha} / \Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	616	316	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.10013	0.6000	0.05400	0.04876	0.05137	4.3645
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	-0.02516		
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	129.67	2355.84	84.00	36	120.01	2204.28	2324.29	162.62	78.62	15.4325
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	\mathbf{s}_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	w _{H(0)}
0.05163	1.01358	0.05094	18.1682	17.9248	0.06997	0.7000	0.03509	0.03614	0.03383	16.9994
F: consur	nption-gt	loidsg goal	seek, wher	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	0.01592		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1165.33	7460.16	216.00	164.00	379.99	3447.72	3827.71	453.38	237.38	2.7318
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	s_{H}	S _{SII/Y}	s _{SH/Y}	W _{F(0)}
0.09927	1.94899	0.05094	6.4017	3.2847	0.11845	0.5684	0.06573	0.05643	0.06202	2.9586
							$Y_{H(0)}/Y_{F(0)}$	0.60723	Ω	$H(0) < \Omega_{F(0)}$

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The remose cu	$vc, D_K,$	and the	assels va	iuation ra	1110, <i>v</i>				
	Ω^*	I/K	g _K *	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. Total	1.5956	0.0563	0.0386	1.4597	0.0509	0.0349	1.4597	1.0000	1.4597
H: capital-goods	1.2351	0.0638	0.0398	1.6021	0.0611	0.0382	1.6021	1.0000	1.6021
F: consumption-goo	1.8237	0.0531	0.0380	1.3990	0.0466	0.0333	1.3990	1.0000	1.3990
Case 2. Total H: capital-goods F: consumption-goo	1.5956 1.0136 1.9490	0.0563 0.0624 0.0544	0.0386 0.0390 0.0385	1.4597 1.5989 1.4150	0.0509 0.0509 0.0509	0.0349 0.0319 0.0360	1.4597 1.5989 1.4150	1.0000 1.0000 1.0000	1.4597 1.7338 1.3714
Case 3. Total H: capital-goods F: consumption-goo	1.6107 2.2986 1.4276	0.0563 0.0754 0.0482	0.0386 0.0425 0.0373	1.4587 1.7733 1.2904	0.0514 0.0638 0.0454	0.0353 0.0360 0.0352	1.4587 1.7733 1.2904	1.0000 1.0000 1.0000	1.4553 1.3198 1.4975

5. The relative pr	ice level:	real vs. 1	iominal	(a)	Inf. or def	(b)		(c)	
	r(0)	r=∂Yt/∂Kt	$P_{Y}=r(0)/r_{real}$	r M(0) given	py=rM(0)/r rea	r_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0349	0.9457	0.0317	1.0394
H: capital-goods	0.06112	0.06112	1.0000	0.0330	0.5399	0.0382	0.8649	0.0347	0.9507
F: consumption-goo	0.04657	0.04657	1.0000	0.0330	0.7086	0.0333	0.9913	0.0303	1.0896
Case 2. Total	0.05094	0.05094 0.05094	1.0000	0.0330	0.6479 0.6478	0.0349 0.0294	0.9457	0.0317	1.0407 1.1396
H: capital-goods F: consumption-goo		0.05094	1.0000	0.0330	0.6478	0.0294	0.8885	0.0290	1.0084
Case 3. Total H: capital-goods	0.05094	0.05094	1.0000 1.0000	0.0330	0.6479 0.5172	0.0353	0.9340 0.6826	0.0320	1.0304
F: consumption-goo			1.0000	0.0330	0.7265	0.0303	1.0879	0.0320	1.0318

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial Yt/\partial Kt^{\alpha d-1}Lt^{1-\alpha}$ and w(real)= $\partial Yt/\partial Lt=(1-\alpha)AtK^{\alpha}Lt^{\alpha}$

6. Relat	ionships between price lev	els: r _H & w _H for	P_H and r_F	$\& w_F$ for	P _F	Rybczyns	ski
For H,	$P_{H}=a_{KH}r_{H}+a_{LH}w_{H}$ When real	l=nominal, the price lev	vel is 1.0.	The ela	sticity of s	substitution is 1.	.0.
For F,	$\mathbf{P}_{\mathrm{F}} = \mathbf{a}_{\mathrm{KF}} \cdot \mathbf{r}_{\mathrm{F}} + \mathbf{a}_{\mathrm{LF}} \cdot \mathbf{w}_{\mathrm{F}} \qquad r_{\mathrm{H}}$	$r_F = w_H$	W_F	P_{H}	$P_F = p$	$=P_H/P_F$	
Case 1.	Total						
	H: capital-goods 0.06112	16.9994		1		1	
	F: consumption-goods	0.04657	2.9586		1		
Case 2.	Total						
	H: capital-goods 0.05094	16.9994		1		1	
	F: consumption-goods	0.05094	2.9586		1		
Case 3.	Total						
	H: capital-goods 0.06380	4.4405		1		1	
	F: consumption-goods	0.04542	4.2916		1		

ountry=			-	on-goods b	-			0.00020		wa [1962
2	1 0		sumption			NI/O)	$\Delta Y(0)/Y(0)$		A(0) = k(0)	,
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5594	6094	616	316	3.9855
α	$\Omega(0)$	r(0)	k(0)	y(0)	S	s _Π	\mathbf{s}_{H}	$s_{S\Pi/Y}$	$\mathbf{s}_{\mathrm{SH/Y}}$	w(0)
0.08204	1.61070	0.05094	7.5799	4.7060	0.10108	0.6000	0.05454	0.04923	0.05185	4.3199
I: capital	-goods						$\Delta Y_{H(0)}/Y_{H(0)}$	-0.46267		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_H(0)$	A(0)
0.00755	246.20	2944.80	131.52	56	187.88	1093.26	1281.14	244.55	113.04	3.6162
α	$\Omega_{\rm H}(0)$	$r_{H(0)}$	k(0)	y(0)	s	sΠ	\mathbf{s}_{H}	S _{SII/Y}	S _{SH/Y}	w _{H(0)}
.14665	2.29857	0.06380	11.9609	5.2036	0.19089	0.7000	0.09832	0.10266	0.08823	4.4405
: consun	nption-go	ods	$\Delta L/L$:	-0.1			$\Delta Y_{F(0)}/Y_{F(0)}$	0.27746		
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	$Y_{\rm F}(0)$	S(0)	S _H (0)	A(0)
.00755		6871.20	168.48	143.64	312.12	4500.99	4813.11	371.45	202.96	4.0625
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	S _H	S _{STI/Y}	S _{SH/Y}	W _{F(0)}
.06485	1.42760	0.04542	6.5515	4.5892	0.07717	0.5398	0.04370	0.03501	0.04217	4.2916
.00405	1.42700	0.04542	0.5515	4.5072	0.07717	0.5570	$Y_{H(0)}/Y_{F(0)}$			1.2 > 10 $1(0) > \Omega_{F(0)}$
						Hei			۲≤ه _F approach	
The ne	•		ial assets		coefficient	t <i>x=r/w</i>	ke*=Ω*	*^(1/(1–α))	x_e^*/x_e	=k(0)/ke
		r CB goal see	r_M^* at β^*	r*/r _{M*}	$c_{CB}=r_M*/r_{CB}$	α_x	$x_0 = \alpha_x / k (0$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_e^*
ase 1. –	Total	0.0317	0.0349	1.4597	1.09913	0.0885	0.0117	1.6629	0.0532	0.2194
capital-	goods	0.0347	0.0382	1.6021	1.09913	0.0817	0.0036	1.2566	0.0650	0.0553
consum	ption-goo	0.0303	0.0333	1.3990	1.09913	0.0928	0.0157	1.9283	0.0481	0.3270
		goal seek			goal seek					
	Total	0.0317	0.0349	1.4597	1.10047	0.0885	0.0117	1.6629	0.0532	0.2194
: capital-		0.0290	0.0294	1.5989	1.10026	0.0544	0.0045	1.0143	0.0537	0.0837
consum	ption-goo	0.0327	0.0371	1.4150	1.10002	0.1102	0.0145	2.0977	0.0525	0.2759
	Total	0.0320	0.0353	1.4587	1.10069	0.0894	0.0117	1.6808	0.0532	0.2195
: capital-		0.0327	0.0483	1.7733	1.10002	0.1719	0.0068	2.6520	0.0648	0.1054
	ption-goo		0.0303	1.2904	1.10066		0.0142	1.4633	0.0474	
lote: Whe	n the effe	ctive labou	ır is used, t	the coeffic	ient, x ₀ ai	dx_e , are	connected	with ke (0)	(see also b	
ote: Whe Data fo	n the effe	ctive labou	ır is used, t Dhlin, Ry	the coeffic	ient, x ₀ an, the Stol	nd x _e , are per-Sam	connected uelson, an	with <i>ke</i> (0) d Leonti		elow).
ote: Whe Data for P _M /P _F =1	n the effe or the He	ctive labou cksher-C k(0)	ur is used, t Dhlin, Ry Δk/k(0)	the coeffic bczynski	ient, x ₀ ai	nd <i>x_e</i> , are per-Sam w(0)=w(re	connected uelson, an w(0)/r(0)	with <i>ke</i> (0) d Leonti r(0)/w(0)	(see also b ef parado k/(w/r)	elow). x α _x (w/r)
ote: Whe Data for =P _M /P _F =1	n the effe	ctive labou cksher-C	ur is used, t Dhlin, Ry Δk/k(0)	the coeffic	ient, x ₀ an , the Stol sigma	nd x _e , are per-Sam	connected uelson, an	with <i>ke</i> (0) d Leonti	(see also b ef parado	elow). x
ote: Whe Data fo $=P_M/P_F=1$ ase 1.	n the effe or the He I Total	ctive labou cksher-C k(0)	ur is used, t Dhlin, Ry Δk/k(0) (Δ(0.0000	the coeffic bczynski	ient, x ₀ an, the Stol	nd <i>x_e</i> , are per-Sam w(0)=w(re	connected uelson, an w(0)/r(0)	with <i>ke</i> (0) d Leonti r(0)/w(0)	(see also b ef parado k/(w/r) 0.0885	elow). x $\alpha_x(w/r)$ 7.5799
ote: Whe Data for $=P_M/P_F=1$ ase 1. capital-	n the effe or the He I Total	ctive labou ccksher-C k(0) 7.5799 22.7102	tr is used, t Dhlin, Ry $\Delta k/k(0)$ ($\Delta ($	the coeffic bczynski	ient, x ₀ an , the Stol sigma	nd x_e , are per-Sam w(0)=w(re) 4.3645	connected uelson, an : w(0)/r(0) 85.68	with ke (0) d Leonti <u>r(0)/w(0)</u> 0.0117	(see also b ef parado k/(w/r) 0.0885	elow). x $\frac{\alpha_{x}(w/r)}{7.5799}$ 22.7102
ote: Whe Data fo $=P_M/P_F=1$ ase 1. : capital-	on the effe or the He I Total goods	ctive labou ccksher-C k(0) 7.5799 22.7102	ur is used, t Dhlin, Ry Δk/k(0) (Δ(0.0000	the coeffic bczynski w/r)/(w/r) 0.0000	ient, x ₀ an , the Stol sigma #DIV/0!	nd x _e , are per-Sam w(0)=w(re 4.3645 16.9994	connected uelson, an w(0)/r(0) 85.68 278.11	with ke (0) d Leonti <u>r(0)/w(0)</u> 0.0117 0.0036 0.0157	(see also b ef parado k/(w/r) 0.0885 0.0817	elow). x $\frac{\alpha_{x}(w/r)}{7.5799}$ 22.7102
ote: Whe Data fo $=P_M/P_F=1$ ase 1. : capital- consump	on the effe or the He I Total goods	ctive labou ccksher-C k(0) 7.5799 22.7102	ur is used, t Dhlin, Ry Δk/k(0) (Δ(0.0000	the coeffic bczynski w/r)/(w/r) 0.0000	ient, x ₀ an , the Stol sigma #DIV/0!	nd x _e , are per-Sam w(0)=w(re 4.3645 16.9994 2.9586	connected uelson, an (x w(0)/r(0) (x x x 0)/r(0) (x x x x x x x x x x x x x x x x x x x	with $ke(0)$ ad Leontia <u>r(0)/w(0)</u> 0.0117 0.0036 0.0157 = α	(see also b ef parado k/(w/r) 0.0885 0.0817 0.0928	elow). x $\alpha_x(w/r)$ 7.5799 22.7102 5.8963 =k(0)
ote: Whe Data fo $=P_M/P_F=1$ ase 1. capital- consumptions ase 2.	n the effector the He I Total goods ption-goo	ctive labou ccksher-C k(0) 7.5799 22.7102 5.8963	r is used, t Dhlin, Ry $\Delta k/k(0)$ ($\Delta ($ 0.0000 0.0000	the coeffic bczynski w/r)/(w/r) 0.0000	ient, x ₀ an , the Stol sigma #DIV/0!	nd x _e , are per-Sam w(0)=w(re 4.3645 16.9994	connected uelson, an w(0)/r(0) 85.68 278.11	with ke (0) d Leonti <u>r(0)/w(0)</u> 0.0117 0.0036 0.0157	(see also b ef parado $\frac{k/(w/r)}{0.0885}$ 0.0817 0.0928 $\frac{k}{(1-\alpha)=\alpha_x}$	elow). x $\frac{\alpha_{x}(w/r)}{7.5799}$ 22.7102 5.8963 =k(0) 7.5799
ote: Whe Data fo $=P_M/P_F=1$ ase 1. : capital- consumptions : capital- : capital-	n the effector the He I Total goods ption-goo	ctive labou ccksher-C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682	ur is used, t Dhlin, Ry Δk/k(0) (Δ(0.0000	the coeffic bczynski (w/r)/(w/r) 0.0000 0.0000	<pre>ient, x₀ an , the Stol sigma #DIV/0! #DIV/0!</pre>	nd x _e , are per-Sam w(0)=w(re 4.3645 16.9994 2.9586 4.3645	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68	with ke (0) ad Leontii r(0)/w(0) 0.0117 0.0036 0.0157 $=\alpha$ 0.0117	(see also b ef parado k/(w/r) 0.0885 0.0817 0.0928 $/(1-\alpha)=\alpha_x$ 0.0885	elow). \mathbf{x} $\frac{\alpha_x(w/r)}{7.5799}$ 22.7102 5.8963
ote: Whe Data fo $=P_M/P_F=1$ ase 1. : capital- consumptions : capital- : capital-	n the effer or the He I Total goods ption-goo Total goods	ctive labou ccksher-C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682	rr is used, t Dhlin, Ry <u>Δk/k(0)</u> (Δ(0.0000 0.0000 -0.2000	the coeffic bczynski. w/r)/(w/r) 0.0000 0.0000 0.1999	ient, x ₀ ar , the Stol <i>sigma</i> #DIV/0! #DIV/0! 1.0003	nd x _e , are per-Sam w (0)=w(re 4 .3645 16 .9994 2 .9586 4 .3645 16 .9994	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68 333.71	with ke (0) 1d Leonti r(0)/w(0) 0.0117 0.0036 0.0157 = α 0.0117 0.0030	$\begin{array}{c} \text{(see also b)} \\ \text{ef parado} \\ \hline \text{k/(w/r)} \\ \hline 0.0885 \\ 0.0817 \\ 0.0928 \\ \text{/(1-\alpha)=}\alpha_x \\ 0.0885 \\ 0.0544 \end{array}$	elow). x $\frac{\alpha_x(w/r)}{7.5799}$ 22.7102 5.8963 =k(0) 7.5799 18.1682
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ote: Whe Data for $P_M/P_F=1$ ase 1. : capital-, consump ase 2. : capital-, consump ote: when ybczensl Introdu $P_F(0)=0$ Mase 1.	in the effector the Hamiltonian the effector the Hamiltonian for the Hamiltonian form the Hamiltonian for the Hamiltonian for the Hamiltonian for	ctive labor ccksher- C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515 ctive labor only holds relative $r_{\rm H}(0)_{\rm nomina}$ oductivity	r is used, t $\Delta k/k(0)$ $\Delta k/k(0)$ $\Delta k/k(0)$ (Δt) 0.0000 0.0000 -0.2000 0.0857 -0.4733 0.1111 r is used, t under the price leve $\mu r (\Theta T_{H/2})^{-1}$	the coeffic bczynski. (w/r)/(w/r) 0.0000 0.0000 (0.0857) (0.7497) 0.4872 the current e condition el, $p = P_H$ K _H), where	ient, x_0 and , the Stol sigma #DIV/0! #DIV/0! 1.0003 1.0002 -0.6313 -0.2281 wage rate n of H-O. / P_F : Du e p=P _H /P _F W H(margLPPO)	d x_e , are per-Sam (w(0)=w(re 4.3645 16.9994 2.9586 4.3645 16.9994 2.9586 4.3199 4.4405 4.2916 and the pr ality [Jor w _F =w _F (0)	connected uelson, an w(0)/r(0) 85.68 278.11 63.53 85.68 333.71 58.08 84.81 69.60 94.48 rofit rate ar ues, R. W.	with ke (0) d Leonti r(0)/w(0) 0.0117 0.0036 0.0157 $=\alpha$ 0.0117 0.00172 0.0118 0.0144 0.0106 e connecte , 1965] WH(0)nomina	e (see also b ef parado k/(w/r) 0.0885 0.0817 0.0928 $/(1-\alpha)=\alpha_x$ 0.0885 0.0544 0.1102 0.0894 0.1719 0.0693 d with k (0 S-Samuels $=P \cdot (\Rightarrow Y_H (\Rightarrow I P_P r))$	elow). x $\alpha_x(w/r)$ 7.5799 22.7102 5.8963 =k(0) 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515). on [194] -ti) hanges (%
the second seco	n the effern Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo total goods ption-goo total goods ption-goo total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods ption-goo Total goods total goods total goods total goods total goods total goods total goods total goods total goods total goods total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total total tota	tive labou cksher-C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515 ctive labou only holds relative $r_H(0)_{nomina}$ oductivity -goods	r is used, t Dhlin, Ry $\Delta k/k(0)$ ($\Delta ($ 0.0000 -0.2000 0.0857 -0.4733 0.1111 r is used, t under the price leve price leve $^{P} H_{mag,pro.}$ 0.05094 0.06112	the coeffic bczynski. (w/r)/(w/r) 0.0000 0.0000 (0.0857) (0.7497) 0.4872 the current e condition el, $p = P_H$ K _H), where	ient, x_0 and sigma #DIV/0! #DIV/0! 1.0003 1.0002 -0.6313 -0.2281 wage rate n of H-O. //P _F : Du e p=P _H /P _F ; WHomegiPro.	d x_e , are per-Sam (w(0)=w(re 4.3645 16.9994 2.9586 4.3645 16.9994 2.9586 4.3199 4.4405 4.2916 and the pr ality [Jor w _F =w _F (0)	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68 333.71 58.08 84.81 69.60 94.48 roft rate arr nes, R. W. $\models \Im Y_F / \Im L_F$ P_H	with ke (0) d Leonti r(0)/w(0) 0.0117 0.0036 0.0157 $=\alpha$ 0.0117 0.00172 0.0118 0.0144 0.0106 e connecte , 1965] WH(0)nomina	$\begin{aligned} & (\text{see also b} \\ ef (\text{parado} \\ k(\text{w/r}) \\ 0.0885 \\ 0.0817 \\ 0.0928 \\ /(1-\alpha) = \alpha_x \\ 0.0885 \\ 0.0544 \\ 0.1102 \\ 0.0544 \\ 0.1102 \\ 0.0544 \\ 0.1719 \\ 0.0693 \\ d \text{ with } k(0) \\ \text{s-samuels} \\ erp \cdot (aY_{11}/a) \\ erp \cdot (aY_{11}/a) \\ erp + ($	elow). x $\frac{\alpha_x(w/r)}{7.5799}$ 22.7102 5.8966 = $k(0)$ 7.5799 18.1682 6.4011 7.5799 11.9609 6.5512). on [194 -41) hanges (% for r & y 0.8334
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bete: When Data fc $P_M/P_F=1$ ase 1 capital- consump ase 2	n the effector the Hamiltonian the effector the Hamiltonian for the effector of the Hamiltonian for the Hamiltonian foret here here here here here here here h	ctive labor cksher-C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515 ctive labor only holds relative r _H (0) _{nomina} oductivity -goods ption-goo	r is used, t Dhlin, Ry $\Delta k/k(0)$ ($\Delta ($ 0.0000 0.0000 -0.2000 0.0857 -0.4733 0.1111 r is used, t under the price level $r = p \cdot (\Im Y_H / \partial$ r H(marg, pro.) 0.05094 0.06112 ds	the coeffic bczynski. (w/r)/(w/r) 0.0000 0.0000 (0.0857) (0.7497) 0.4872 (0.7497) (0.7497) 0.4872 (0.7497) (0	ient, x_0 and , the Stol sigma #DIV/0! #DIV/0! 1.0003 1.0002 -0.6313 -0.2281 wage rate n of H-O. //P_F: Du e p=P _H /P _F 16.9994	d x_e , are per-Sam $w(0)=w(re 4.3645 16.9994 2.9586 4.3645 16.9994 2.9586 4.3199 4.4405 4.2916 and the pu ality [Jor w_F=w_F(0)w_F(margl_pro.$	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68 333.71 58.08 84.81 69.60 94.48 roft rate arr nes, R. W. $\models \Im Y_F / \Im L_F$ P_H	with ke (0) dd Leonti r (0)/w(0) 0.0117 0.0036 0.0157 = α 0.0117 0.0030 0.0172 0.0118 0.0144 0.0106 e connecte , 1965] W _{H(0)nomina} <i>P_F</i>	$\begin{aligned} & (\text{see also b} \\ ef (\text{parado} \\ k(\text{w/r}) \\ 0.0885 \\ 0.0817 \\ 0.0928 \\ /(1-\alpha) = \alpha_x \\ 0.0885 \\ 0.0544 \\ 0.1102 \\ 0.0544 \\ 0.1102 \\ 0.0544 \\ 0.1719 \\ 0.0693 \\ d \text{ with } k(0) \\ \text{s-samuels} \\ erp \cdot (aY_{11}/a) \\ erp \cdot (aY_{11}/a) \\ erp + ($	elow). x $\alpha_x(w/r 7.5799)$ 22.710() 5.896(
bete: Whee Data fc $P_M/P_F^{=1}$ is capital- consumption as 2. is capital- consumption by bczenst Introde $=r_F(0)==$ Masse 1. is capital- is capital- capital- is capital- capital- is capital- capital- is capital- is	in the effector the Hermitian the effector the Hermitian the effector of the terminal sector of te	ctive labor cksher-C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515 ctive labor only holds relative r _H (0) _{nomina} oductivity -goods ption-goo	r is used, t Dhlin, Ry $\Delta k/k(0)$ $\Delta k/k(0)$ $(\Delta (\Delta (0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000000$	the coeffic bczynski. (w/r)/(w/r) 0.0000 0.0000 (0.0857) (0.7497) 0.4872 (0.7497) (0.7497) 0.4872 (0.7497) (0	ient, x_0 and , the Stol sigma #DIV/0! #DIV/0! 1.0003 1.0002 -0.6313 -0.2281 wage rate n of H-O. /P ; Du e p=P _H /P _F 16.9994 4.3645	d x_e , are per-Sam $w(0)=w(re 4.3645 16.9994 2.9586 4.3645 16.9994 2.9586 4.3199 4.4405 4.2916 and the pu ality [Jor w_F=w_F(0)w_F(margl_pro.$	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68 333.71 58.08 84.81 69.60 94.48 rofit rate ar nes, R. W. $= 9Y_F/\partial L_F$ P_H 1	with ke (0) dd Leonti r (0)/w(0) 0.0117 0.0036 0.0157 = α 0.0117 0.0030 0.0172 0.0118 0.0144 0.0106 e connecte , 1965] W _{H(0)nomina} <i>P_F</i>	$\begin{array}{c} \text{(see also b)}\\ \text{ef parado}\\ \frac{k(w/r)}{0.0885}\\ 0.0817\\ 0.0928\\ /(1-\alpha)=\alpha_x\\ 0.0828\\ /(1-\alpha)=\alpha_x\\ 0.0544\\ 0.1102\\ 0.0544\\ 0.1102\\ 0.0544\\ 0.1719\\ 0.0693\\ d \text{ with } k (0\\ \text{S-Samuels}\\ \text{s-samuels}\\ \text{s-samuels}\\ \text{g}=p^-(aY_H/aI_F) + \frac{1}{1}\\ 1\\ 1 \end{array}$	elow). x $\alpha_x(w/r)^{-7,579;9}$ $= $\xi(0)$ 7.579;9 $= $\xi(0)$ 7.579;9 11.960;6 6.551;). on [194 1.960;6 6.551;). on [194 1.960;6 6.551;). on [194 1.960;6 6.551;). on (194) 1.960;6 6.551;). on (194) 1.960;6 6.551;). on (194) 1.960;6 6.551;). on (194) 1.960;6 6.551;). on (194) 1.960;6 6.551;). on (194) 1.040;6 1.043;3 1.043;3 1.093;3 0.0975;2
ote: When $Data fe =P_M/P_F=1$ ase 1. : capital- consump ase 3. : capital- consumm ote: When ybczenst Introdu =r_F(0)=0 ⁻¹ Mase 1.	in the effector the Hermitian the effector the Hermitian the effector of the terminal sector of te	tive labou cksbar-C k(0) 7.5799 22.7102 5.8963 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515 ctive labou only holds relative r ₁₁ (0) _{nomina} oductivity goods ptools	r is used, t Dhlin, Ry $\Delta k/k(0)$ $\Delta k/k(0)$ $(\Delta (\Delta (0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.0000 - 0.000000 - 0.00000 - 0.00000 - 0.00000 - 0.000000 - 0.00000 - 0.00000000$	the coeffic bczynski w/r//(w/r) 0.0000 0.0000 0.1999 (0.0857) (0.7497) 0.4872 the current condition el, $p=P_H$ K _H), where $r_{F(margl, Pro)}$ 0.04657	ient, x_0 and , the Stol sigma #DIV/0! #DIV/0! 1.0003 1.0002 -0.6313 -0.2281 wage rate n of H-O. /P ; Du e p=P _H /P _F 16.9994 4.3645	d x_e , are per-Sam w(0)=w(re 4.3645 16.9994 2.9586 4.3645 16.9994 2.9586 4.3199 4.4405 4.2916 and the pr ality [Jor w _F =w _F (0) ^W <i>F</i> (margi,pro.)	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68 333.71 58.08 84.81 69.60 94.48 rofit rate ar nes, R. W. $= 9Y_F/\partial L_F$ P_H 1	with ke (0) d Leonti r(0)/w(0) 0.0117 0.0036 0.0157 $=\alpha$ 0.0117 0.0030 0.0172 0.0118 0.0144 0.0106 e connecte , 1965] W _{H(0)momina} <i>P_F</i> 1	$\begin{array}{c} \text{(see also b)}\\ \text{ef parado}\\ \frac{k(w/r)}{0.0885}\\ 0.0817\\ 0.0928\\ /(1-\alpha)=\alpha_x\\ 0.0828\\ /(1-\alpha)=\alpha_x\\ 0.0544\\ 0.1102\\ 0.0544\\ 0.1102\\ 0.0544\\ 0.1719\\ 0.0693\\ d \text{ with } k (0\\ \text{S-Samuels}\\ \text{s-samuels}\\ \text{s-samuels}\\ \text{g}=p^-(aY_H/aI_F) + \frac{1}{1}\\ 1\\ 1 \end{array}$	elow). x x $\alpha_x(w/r)^7$, 75799 22.7100 5.8966 = k (0) 7.5799 18.1682 6.4017 7.5799 11.9609 6.5512). on [194] d ₄₁ h anges (? v ₁ on (194) d ₄₁ on (194) d ₄₁ d ₄₁
ote: When Data fc $P_M/P_F=1$ as as 1. : capital- consump as 2. : capital- consump to: capital- consump to: capital- consump to: capital- consump to: when ybczensl Introde $=r_F(0)=9$ Masse 1. asse 2.	n the effector the Hot Total goods ption-	trive labor k(0) r, 5799 22.7102 5.8963 7.5799 18.1682 6.4017 7.5799 11.9609 6.5515 6.5515 relative $r_{II}(0)_{nomina}$ oductivity r_{goods} ppion-goods ppion-goods	r is used, t Dhlin, Ry $\Delta k/k(0)$ ($\Delta ($ 0.0000 0.0000 -0.2000 0.0857 -0.4733 0.1111 r is used, t under the price level = $P(\Theta Y_H/\Theta = P(0) + P(0) + P(0) + P(0))$ 0.05094 0.05094 ds	the coeffic bczynski w/r//(w/r) 0.0000 0.0000 0.1999 (0.0857) (0.7497) 0.4872 the current condition el, $p=P_H$ K _H), where $r_{F(margl, Pro)}$ 0.04657	ient, x_0 and , the Stoll sigma #DIV/0! #DIV/0! 1.0003 1.0002 -0.6313 -0.281 wage rate of H-O. / P_F : Du e p=P _H /P _F 16.9994 4.3645 16.9994	d x_e , are per-Sam w(0)=w(re 4.3645 16.9994 2.9586 4.3645 16.9994 2.9586 4.3199 4.4405 4.2916 and the pr ality [Jor w _F =w _F (0) ^W <i>F</i> (margi,pro.)	connected uelson, an : w(0)/r(0) 85.68 278.11 63.53 85.68 333.71 58.08 84.81 69.60 94.48 rofit rate ar nes, R. W. $= 9Y_F/\partial L_F$ P_H 1	with ke (0) d Leonti r(0)/w(0) 0.0117 0.0036 0.0157 $=\alpha$ 0.0117 0.0030 0.0172 0.0118 0.0144 0.0106 e connecte , 1965] W _{H(0)momina} <i>P_F</i> 1	$\begin{array}{c} \text{(see also b)}\\ \text{ef parado}\\ \frac{k(w/r)}{0.0885}\\ 0.0817\\ 0.0928\\ /(1-\alpha)=\alpha_x\\ 0.0828\\ /(1-\alpha)=\alpha_x\\ 0.0544\\ 0.1102\\ 0.0544\\ 0.1102\\ 0.0544\\ 0.1719\\ 0.0693\\ d \text{ with } k (0\\ \text{S-Samuels}\\ \text{s-samuels}\\ \text{s-samuels}\\ \text{g}=p^-(aY_H/aI_F) + \frac{1}{1}\\ 1\\ 1 \end{array}$	elow). x $\alpha_x(w/r)$ 7.5799 22.7102 5.8963 =k(0) 7.5799 18.1682 6.4012 7.5799 11.9609 6.5512). on [194] - _H)

T13 Case Country=		lay [1960]) ^{1-α} / $\Omega(0)$								
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1253	953	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	S _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.20367	0.6000	0.16285	0.04876	0.15491	4.3645
H: capita	l-goods	0.3	s=S/Y	0.20367	0.36	0.39		0.33		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	263.76	2944.80	126.00	54	180.00	2204.28	2384.28	413.49	287.49	7.5343
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	SΠ	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	w _{H(0)}
0.07549	1.23509	0.06112	11.1648	9.0397	0.17342	0.7000	0.12730	0.05285	0.12058	8.3572
F: consur	nption-go	ods	1-s	0.79633						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	$S_H(0)$	A(0)
0.00755	1031.24	6871.20	174.00	146.00	320.00	3447.72	3767.72	839.51	665.51	3.1100
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	s _H	$s_{S\Pi/Y}$	S _{SH/Y}	$W_{F(0)}$
0.08493	1.82370	0.04657	6.6630	3.6536	0.22282	0.5438	0.18519	0.04618	0.17663	3.3433
Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)} = 0.63282$									Ω	_{H(0)} <Ω _{F(0)}

1. Basic variables and	parameters under	· convergence	(delta=alpha)

	$g_Y *= g_K^*$	81*	g_y^*	$arOmega^*$	r^*	i	$\beta^*_{(\delta=\alpha)}$	п	α
Case 1. Total	0.0716	0.0584	0.0636	1.5956	0.0509	0.17269	0.6617	0.00755	0.08127
H: capital-goods	0.0726	0.0597	0.0645	1.2351	0.0611	0.14931	0.6004	0.00755	0.07549
F: consumption-goo	0.0711	0.0578	0.0631	1.8237	0.0466	0.18749	0.6920	0.00755	0.08493
Case 2. Total	0.0716	0.0584	0.0636	1.5956	0.0509	0.17269	0.6617	0.00755	0.08127
H: capital-goods	0.0656	0.0546	0.0576	1.0136	0.0509	0.12108	0.5489	0.00755	0.05163
F: consumption-goo	0.0741	0.0595	0.0661	1.9490	0.0509	0.20403	0.7082	0.00755	0.09927
Case 3. Total	0.0719	0.0586	0.0638	1.6107	0.0509	0.17433	0.6639	0.00755	0.08204
H: capital-goods	0.1073	0.0845	0.0990	2.2986	0.0638	0.33115	0.7448	0.00755	0.14665
F: consumption-goo	0.0593	0.0480	0.0513	1.4276	0.0454	0.13258	0.6380	0.00755	0.06485

2. Basic variables and parameters under the current situation (delta>alpha)

	g Y(a)	g K(a)	$\boldsymbol{g}_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.0974	0.70873	-0.0470	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0292	0.0322	0.1065	0.78942	-0.1891	11.1648	9.0397
F: consumption-goo	0.0215	0.0989	0.0062	0.0139	0.0907	0.96648	-0.2745	6.6630	3.6536
For min capital goo	od growth	0.0509							
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.0974	0.70873	-0.0470	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0122	0.0322	0.1410	0.87757	-0.3287	8.9318	8.8122
F: consumption-goo	0.0233	0.0685	0.0097	0.0156	0.0605	0.95600	-0.2478	7.2341	3.7117
Case 3. Total	0.0800	0.3000	0.0485	0.0718	0.0960	0.71407	-0.0502	7.5799	4.7060
H: capital-goods	0.0400	0.4000	-0.0251	0.0322	-0.0186	1.05373	-0.3089	8.0266	3.4920
F: consumption-goo	0.0514	0.1431	0.0351	0.0436	0.1345	0.69572	-0.0577	7.4034	5.1859
$g_{\Lambda(n)} = g_{\Lambda(n)} - \alpha g_{\Lambda(n)} - (1 - \alpha g_{\Lambda(n)}) - (1 - \alpha g_{\Lambda(n)$	α)n d	lelta=(n+e	$\alpha(i-i\beta^*-n))$	$(i(1-B^*))$ (3	$1 - ((1/i)(g_{s}))$	k(0)^(8	$-\alpha$))	

 $g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1-\alpha)n \qquad delta = (n+\alpha(i-i\beta*-n))/(i(1-\beta*)) \beta_{actual(\delta > \alpha) =} 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))$ Heckscher-Ohlin

	TICCRSCIIC	-Onni							
3. Relat	tionships between	quantitie	s: K _H & I	K _F and I	$L_H \& L_F$	K=(a _{KH} ·y _H)L	H+(a _{KF} y _F)L _F	K=a _{KH} .Y _H +	a _{KF} .Y _F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			УH	$\boldsymbol{a_{LH}}{=}1/\boldsymbol{y_{H}}$	$L=(a_{LH}y_{H})L_{H}$	$_{\rm f}$ +($a_{\rm LF}$, $y_{\rm F}$) $L_{\rm F}$	L=a _{LH} .Y _H +a	a _{LF} .Y _F
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	УF	$\boldsymbol{a_{LF}}{=}1/y_F$	$L_H \& L_F$	$Y_H \& Y_F$	$K = K_H + K_F$	L=L _H +L _F
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.2351		9.0397	0.11062	263.76	2384.28	2945	264
	F: consumption-go	ods	1.8237	3.6536	0.27370	1031.24	3767.72	6871	1031
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.0136		8.8122	0.11348	263.76	2324.29	2356	264
	F: consumption-go	ods	1.9490	3.7117	0.26941	1031.24	3827.71	7460	1031
Case 3.	Total	1.6107		4.7060	0.21250	1295	6094	9816	1295
	H: capital-goods	2.2986		3.4920	0.28637	366.88	1281.14	2945	367
	F: consumption-go	ods	1.4276	5.1859	0.19283	928.12	4813.11	6871	928

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T13 Case	T13 Case 2. K decreases in capital-goods by 20% Findlay [1960]											
Country=	capital-g	oods+con	sumption-	goods: T	=H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)		
0.00755	1295	9816	300	200	500	5652	6152	1253	953	4.0295		
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)		
0.08127	1.59558	0.05094	7.5799	4.7506	0.20367	0.6000	0.16285	0.04876	0.15491	4.3645		
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	-0.02516				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)		
0.00755	263.76	2355.84	84.00	36	120.01	2204.28	2324.29	330.79	246.79	7.8702		
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}		
0.05163	1.01358	0.05094	8.9318	8.8122	0.14232	0.7000	0.11016	0.03614	0.10618	8.3572		
F: consur	nption-gb	b oids g goal :	seek, where	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	0.01592				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)		
0.00755	1031.24	7460.16	216.00	164.00	379.99	3447.72	3827.71	922.21	706.21	3.0497		
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	s_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	$W_{F(0)}$		
0.09927	1.94899	0.05094	7.2341	3.7117	0.24093	0.5684	0.19553	0.05643	0.18450	3.3433		
							$Y_{H(0)}/Y_{F(0)}$	0.60723	Ω	_{H(0)} <Ω _{F(0)}		

4. The Penrose curve, B_K , and the assets valuation ratio, v

	Ω^*	I/K	g_K^*	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. Total	1.5956	0.1082	0.0716	1.5113	0.0509	0.0337	1.5113	1.0000	1.5113
H: capital-goods	1.2351	0.1209	0.0726	1.6657	0.0611	0.0367	1.6657	1.0000	1.6657
F: consumption-goo	1.8237	0.1028	0.0711	1.4452	0.0466	0.0322	1.4452	1.0000	1.4452
Case 2. Total	1.5956	0.1082	0.0716	1.5113	0.0509	0.0337	1.5113	1.0000	1.5113
H: capital-goods	1.0136	0.1195	0.0709	1.6840	0.0509	0.0302	1.6840	1.0000	1.8218
F: consumption-goo	1.9490	0.1047	0.0722	1.4509	0.0509	0.0351	1.4509	1.0000	1.4120
Case 3. Total	1.6107	0.1082	0.0717	1.5101	0.0514	0.0341	1.5101	1.0000	1.5062
H: capital-goods	2.2986	0.1441	0.0780	1.8471	0.0638	0.0345	1.8471	1.0000	1.3426
F: consumption-goo	1.4276	0.0929	0.0698	1.3311	0.0454	0.0341	1.3311	1.0000	1.5673

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5. The relative pr	ice level:	real vs. 1	ıominal	(a)	Inf. or def	(b)	(c)		
	r(0)	$r = \partial Y t / \partial K t$	P _Y =r(0)/r real	r _{M(0)} given	$p_{Y}=r_{M(0)}/r_{rea}$	r_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0337	0.9791	0.0306	1.0770
H: capital-goods	0.06112	0.06112	1.0000	0.0330	0.5399	0.0367	0.8993	0.0334	0.9891
F: consumption-goo	0.04657	0.04657	1.0000	0.0330	0.7086	0.0322	1.0240	0.0293	1.1273
Case 2. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0337	0.9791	0.0306	1.0779
H: capital-goods	0.05094	0.05094	1.0000	0.0330	0.6478	0.0280	1.1802	0.0275	1.1999
F: consumption-goo	0.05094	0.05094	1.0000	0.0330	0.6479	0.0361	0.9148	0.0319	1.0344
Case 3. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0341	0.9667	0.0309	1.0670
H: capital-goods	0.06380	0.06380	1.0000	0.0330	0.5172	0.0475	0.6944	0.0314	1.0509
F: consumption-goo	0.04542	0.04542	1.0000	0.0330	0.7265	0.0290	1.1386	0.0310	1.0644

 $\underline{r(real)} = \Im Yt / \Im Kt = \alpha AtKt^{\wedge \alpha \cdot 1} Lt^{1 - \alpha} \text{ and } w(real) = \Im Yt / \Im Lt = (1 - \alpha)AtKt^{\alpha} Lt^{\cdot \alpha}$

6. Relat	6. Relationships between price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for P_F Rybczynski											
For H,	$P_{H}=a_{KH}\cdot r_{H}+a_{LH}\cdot w_{H}$ When real	=nominal, th	e price leve	l is 1.0.	The el	The elasticity of substitution is 1						
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$ r_H	r_F	w_H	w_F	P_{H}	P_{F}	$p = P_H / P_F$					
Case 1.	Total											
	H: capital-goods 0.06112		8.3572		1		1					
	F: consumption-goods	0.04657		3.3433		1						
Case 2.	Total											
	H: capital-goods 0.05094		8.3572		1		1					
	F: consumption-goods	0.05094		3.3433		1						
Case 3.	Total											
	H: capital-goods 0.06380		2.9799		1		1					
	F: consumption-goods	0.04542		4.8496		1						

	T13 Case 3. L decreases in consumption-goods by 10% Country=capital-goods+consumption-goods: T=H+F ΔΥ(0)/Υ(0) -0.00939										
Country-	1 0		1	0					A(0)=k(0	$(0)^{-1}\Omega(0)$	
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)	
0.00755	1295	9816	300	200	500	5594	6094	1253	953	3.9855	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	w(0)	
0.08204	1.61070	0.05094	7.5799	4.7060	0.20560	0.6000	0.16447	0.04923	0.15638	4.3199	
H: capita	l-goods						$\Delta Y_{H(0)}/Y_{H(0)}$	-0.46267			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)	
0.00755	366.88	2944.80	131.52	56	187.88	1093.26	1281.14	497.44	365.93	2.5729	
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	s_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}	
0.14665	2.29857	0.06380	8.0266	3.4920	0.38828	0.7000	0.31830	0.10266	0.28562	2.9799	
F: consur	nption-go	oods	$\Delta L/L$:	-0.1			$\Delta Y_{F(0)}/Y_{F(0)}$	0.27746			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)	
0.00755	928.12	6871.20	168.48	143.64	312.12	4500.99	4813.11	755.56	587.08	4.5545	
α	$\Omega_{\rm F}(0)$	$r_{F(0)}$	k(0)	y(0)	s	sΠ	s_{H}	$s_{S\Pi/Y}$	s _{SH/Y}	W _{F(0)}	
0.06485	1.42760	0.04542	7.4034	5.1859	0.15698	0.5398	0.12640	0.03501	0.12197	4.8496	
							Y _{H(0)} /Y _{F(0)}	0.26618	Ω_1	_{H(0)} >Ω _{F(0)}	

7. The neutrality of financial assets and the coeffcient x=r/w

 $r_{CB \text{ goal see}} r_M^*$ at β^* $= \alpha_x / ke^*$ r*/r_M* c_{CB}=r_M*/r_{CB} x_0/x_e^* α_x $x_0 = \alpha_x / k (0$ ke* x. 0.2194 Case 1. 1.6629 Total 0.0306 0.0337 1.5113 1.09997 0.0885 0.0117 0.0532 H: capital-goods 0.0334 0.0367 1.6657 1 09996 0.0817 0.0073 1.2566 0.0650 0.1125 F: consumption-goo 0.0293 0.0322 1.4452 1.10087 0.0928 0.0139 1.9283 0.0481 0.2894 $\alpha_x = \alpha/(1-\alpha)$ goal seek goal seek Case 2. Total 0.0306 0.0337 1.5113 1.10094 0.0885 0.0117 1.6629 0.0532 0.2194 H: capital-goods 0.0275 0.0280 1.6840 1.09989 0.0544 0.0091 1.0143 0.0537 0.1703 0.0319 0.0361 1.4509 0.1102 0.0128 2.0977 0.0525 0.2442 F: consumption-goo 1.10042 Case 3. Total 0.0309 0.0341 1.5101 1.10092 0.0894 0.0117 1.6808 0.0532 0.2195 1.8471 1.09996 H: capital-goods 0.0314 0.0475 0.1719 0.0102 2.6520 0.0648 0.1570 F: consumption-goo 0.0310 0.0290 1.3311 1.10070 0.0693 0.0125 1.4633 0.0474 0.2645 Note: When the effective labour is used, the coefficient, x_{θ} and x_{e} , are connected with ke(0) (see also below).

ke*= $\Omega^{*}(1/(1-\alpha))$

 $x_e^*/x_0 = k(0)/ke^*$

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(re:	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$
Case 1. Total	7.5799	(Δ(w/r)/(w/r)		4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods	11.1648	0.0000	0.0000	#DIV/0!	8.3572	136.72	0.0073	0.0817	11.1648
F: consumption-goo	6.6630	0.0000	0.0000	#DIV/0!	3.3433	71.79	0.0139	0.0928	6.6630
							=α.	$(1-\alpha)=\alpha_x$	=k(0)
Case 2. Total	7.5799				4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods	8.9318	-0.2000	0.1999	1.0003	8.3572	164.06	0.0061	0.0544	8.9318
F: consumption-goo	7.2341	0.0857	(0.0857)	1.0002	3.3433	65.64	0.0152	0.1102	7.2341
Case 3. Total	7.5799				4.3199	84.81	0.0118	0.0894	7.5799
H: capital-goods	8.0266	-0.2811	(0.6584)	-0.4269	2.9799	46.71	0.0214	0.1719	8.0266
F: consumption-goo	7.4034	0.1111	0.4872	-0.2281	4.8496	106.76	0.0094	0.0693	7.4034

Rybczenski [1955] only holds under the condition of H-O.

9. Introduction of relative price level, p = P_H/P_F: Duality [Jones, R. W., 1965] S-Samuelson [1941]

 $\mathbf{r}_{F} = \mathbf{r}_{F}(0) = \Im \mathbf{Y}_{F} / \Im \mathbf{K}_{F} \qquad \mathbf{r}_{H}(0)_{nominal} = \mathbf{p} \cdot (\Im \mathbf{Y}_{H} / \Im \mathbf{K}_{H}), \text{ where } \mathbf{p} = \mathbf{P}_{H} / \mathbf{P}_{F} \quad \mathbf{w}_{F} = \mathbf{w}_{F}(0) = \Im \mathbf{Y}_{F} / \Im \mathbf{L}_{F} \quad \mathbf{w}_{H(0)nominal} = \mathbf{p} \cdot (\Im \mathbf{Y}_{H} / \Im \mathbf{L}_{H})$

	Marginal productivity	r r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	P_{F}	$p = P_H / P_F$	Changes (%)
Case 1.	Total	0.05094		4.3645					for r & w
	H: capital-goods	0.06112		8.3572		1		1	0.8334
	F: consumption-go	ods	0.04657		3.3433		1		1.0438
Case 2.	Total	0.05094		4.3645					1.0937
	H: capital-goods	0.05094		8.3572		1		1.0000	0.9754
	F: consumption-go	ods	0.05094		3.3433		1.0000		1.0000
Case 3.	Total	0.05094		4.3199					0.3566
	H: capital-goods	0.06380		2.9799		1.0000		1.0000	1.0000
	F: consumption-go	ods	0.04542		4.8496		1.0000		1.4506

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T14 Case 1. Both regions have different rates of profit and the wage rates Country=capital-goods+consumption-goods: T=H+F										lay [1960])) ^{1-α} /Ω(0)
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1850	1550	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s _H	S _{S∏/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.30072	0.6000	0.26487	0.04876	0.25195	4.3645
H: capita	l-goods	0.3	s=S/Y	0.30072	0.36	0.39		0.33		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	389.43	2944.80	126.00	54	180.00	2204.28	2384.28	610.50	484.50	5.2553
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s_H	$s_{S\Pi/Y}$	s _{SH/Y}	W _{H(0)}
0.07549	1.23509	0.06112	7.5619	6.1225	0.25605	0.7000	0.21454	0.05285	0.20321	5.6603
F: consur	nption-go	ods	1-s	0.69928						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_F(0)$	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	905.57	6871.20	174.00	146.00	320.00	3447.72	3767.72	1239.50	1065.50	3.5027
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w _{F(0)}
0.08493	1.82370	0.04657	7.5877	4.1606	0.32898	0.5438	0.29649	0.04618	0.28280	3.8072
Cases corr	respond wi	th Hecksh	er-Ohlin b	y region.			$Y_{H(0)}/Y_{F(0)}$	0.63282	Ω	$H(0) < \Omega_{F(0)}$

1. Basic variables and	parameters under convergence	(delta=alpha)

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	$g_Y *= g_K^*$	g_A *	g_y^*	\varOmega^*	r^*	i	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
Case 1. Total	0.1026	0.0867	0.0943	1.5956	0.0509	0.25033	0.6538	0.00755	0.08127
H: capital-goods	0.1033	0.0878	0.0950	1.2351	0.0611	0.21541	0.5922	0.00755	0.07549
F: consumption-goo	0.1022	0.0860	0.0940	1.8237	0.0466	0.27242	0.6844	0.00755	0.08493
Case 2. Total	0.1026	0.0867	0.0943	1.5956	0.0509	0.25033	0.6538	0.00755	0.08127
H: capital-goods	0.0933	0.0807	0.0851	1.0136	0.0509	0.17533	0.5395	0.00755	0.05163
F: consumption-goo	0.1064	0.0884	0.0982	1.9490	0.0509	0.29586	0.7012	0.00755	0.09927
Case 3. Total	0.1029	0.0869	0.0947	1.6107	0.0509	0.25270	0.6561	0.00755	0.08204
H: capital-goods	0.1544	0.1243	0.1457	2.2986	0.0638	0.47915	0.7405	0.00755	0.14665
F: consumption-goo	0.0847	0.0716	0.0765	1.4276	0.0454	0.19242	0.6281	0.00755	0.06485

21 Busie variables and parameters ander the current situation (dena "apia")											
	$g_{Y(a)}$	g K(a)	g A(a)	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)		
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.0921	0.80119	-0.1474	7.5799	4.7506		
H: capital-goods	0.0400	0.4000	0.0292	0.0322	0.0965	0.85866	-0.2665	7.5619	6.1225		
F: consumption-goo	0.0425	0.0970	0.0274	0.0347	0.0888	0.89867	-0.2143	7.5877	4.1606		
For min capital goo	od growth	0.0509	_								
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.0921	0.80119	-0.1474	7.5799	4.7506		
H: capital-goods	0.0400	0.4000	0.0122	0.0322	0.1121	0.92248	-0.3830	6.0495	5.9685		
F: consumption-goo	0.0432	0.0813	0.0283	0.0354	0.0732	0.90947	-0.2083	8.2380	4.2268		
-											
Case 3. Total	0.0800	0.3000	0.0485	0.0718	0.0914	0.80455	-0.1485	7.5799	4.7060		
H: capital-goods	0.0400	0.4000	-0.0251	0.0322	0.0344	1.04273	-0.3022	6.1352	2.6691		
F: consumption-goo	0.0506	0.1199	0.0358	0.0427	0.1115	0.79471	-0.1666	8.4308	5.9055		
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	α)n	delta=(n+	α(i-iβ*-n))/	(i(1-β*))	$B_{actual(\delta > \alpha)}$	_1-((1/i)(g,	$k_{(a)}k(0)^{(\delta-1)}$	-α))			

$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n$	$\frac{delta=(n+\alpha(i-i\beta^*-n))}{(i(1-\beta^*))}\beta_{actual(\delta>\alpha)=}1-((1/i)(g_{A(a)}k))$	(0)^(δ–α))
		Heckscher-Ohlin
3. Relationships between	quantities: K_H & K_F and L_H & L_F K=($a_{KH}, y_{H}, L_{H}+(a_K)$	$F_{F}Y_{F}L_{F}K=a_{KH}Y_{H}+a_{KF}Y_{F}$

For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			Ун	$\boldsymbol{a_{LH}}{=}1/y_{H}$	$L=(a_{LH}y_{H})L_{H}$	$_{I}+(a_{LF},y_{F})L_{F}$	$L=a_{LH}Y_{H}+a_{H}$	LF-YF
For L,	$a_{LH} = 1/y_H$ $a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	\mathbf{y}_{F}	$a_{LF} = 1/y_F$	L _H &L _F	$Y_{\rm H}\&Y_{\rm F}$	K=K _H +K _F	$L=L_H+L_F$
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.2351		6.1225	0.16333	389.43	2384.28	2945	389
	F: consumption-goo	ods	1.8237	4.1606	0.24035	905.57	3767.72	6871	906
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.0136		5.9685	0.16755	389.43	2324.29	2356	389
	F: consumption-goo	ods	1.9490	4.2268	0.23658	905.57	3827.71	7460	906
Case 3.	Total	1.6107		4.7060	0.21250	1295	6094	9816	1295
	H: capital-goods	2.2986		2.6691	0.37465	479.98	1281.14	2945	480
	F: consumption-goo	ods	1.4276	5.9055	0.16933	815.02	4813.11	6871	815

		eases in ca								lay [1960]
Country=	∈capital-g	oods+con	sumption-	goods: 1	=H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$)^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	1850	1550	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	S _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.30072	0.6000	0.26487	0.04876	0.25195	4.3645
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	-0.02516		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{H}(0)$	S(0)	S _H (0)	A(0)
0.00755	389.43	2355.84	84.00	36	120.01	2204.28	2324.29	488.40	404.40	5.4388
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	s _{SH/Y}	w _{H(0)}
0.05163	1.01358	0.05094	6.0495	5.9685	0.21013	0.7000	0.18051	0.03614	0.17399	5.6603
F: consur	nption-gk	loids g goal :	seek, where	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	0.01592		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)
0.00755	905.57	7460.16	216.00	164.00	379.99	3447.72	3827.71	1361.60	1145.60	3.4284
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s _H	$s_{S\Pi/Y}$	S _{SH/Y}	$W_{F(0)}$
0.09927	1.94899	0.05094	8.2380	4.2268	0.35572	0.5684	0.31719	0.05643	0.29929	3.8072
							$Y_{H(0)}/Y_{F(0)}$	0.60723	Ω	$H(0) \leq \Omega_{F(0)}$

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The Penrose curve, <i>B_K</i> , and the assets valuation ratio, <i>v</i>										
	Ω^*	I/K	g_{κ}^{*}	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = 1/\beta^*$	
Case 1. Total	1.5956	0.1569	0.1026	1.5294	0.0509	0.0333	1.5294	1.0000	1.5294	
H: capital-goods	1.2351	0.1744	0.1033	1.6886	0.0611	0.0362	1.6886	1.0000	1.6886	
F: consumption-goo	1.8237	0.1494	0.1022	1.4612	0.0466	0.0319	1.4612	1.0000	1.4612	
Case 2. Total	1.5956	0.1569	0.1026	1.5294	0.0509	0.0333	1.5294	1.0000	1.5294	
H: capital-goods	1.0136	0.1730	0.1009	1.7148	0.0509	0.0297	1.7148	1.0000	1.8536	
F: consumption-goo	1.9490	0.1518	0.1037	1.4634	0.0509	0.0348	1.4634	1.0000	1.4262	
Case 3. Total	1.6107	0.1569	0.1027	1.5282	0.0514	0.0336	1.5282	1.0000	1.5242	
H: capital-goods	2.2986	0.2085	0.1113	1.8735	0.0638	0.0341	1.8735	1.0000	1.3505	
F: consumption-goo	1.4276	0.1348	0.1002	1.3453	0.0454	0.0338	1.3453	1.0000	1.5922	

5. The relative price level: real vs. nominal (a) Inf. or def (b) (c)										
	r(0)	r=∂Yt/∂Kt	Py=r(0)/r real	r _{M(0)} given	py=rM(0)/r rea /	M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)	
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0333	0.9909	0.0303	1.0899	
H: capital-goods	0.06112	0.06112	1.0000	0.0330	0.5399	0.0362	0.9117	0.0329	1.0027	
F: consumption-goo	0.04657	0.04657	1.0000	0.0330	0.7086	0.0319	1.0354	0.0290	1.1389	
Case 2. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0333	0.9909	0.0303	1.0899	
H: capital-goods	0.05094	0.05094	1.0000	0.0330	0.6478	0.0275	1.2008	0.0270	1.2217	
F: consumption-goo	0.05094	0.05094	1.0000	0.0330	0.6479	0.0357	0.9240	0.0316	1.0437	
Case 3. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0337	0.9782	0.0306	1.0788	
H: capital-goods	0.06380	0.06380	1.0000	0.0330	0.5172	0.0472	0.6985	0.0310	1.0658	
F: consumption-goo	0.04542	0.04542	1.0000	0.0330	0.7265	0.0285	1.1567	0.0307	1.0750	
Mater If the main law	-1 -f	D :			ما دام ما معناء				- 1.0	

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. <u>r(real)</u>= $\partial Y t_{\partial} K t^{\alpha - 1} L t^{1-\alpha}$ and w(real)= $\partial Y t_{\partial} L t = (1-\alpha) A t K^{\alpha} L t^{\alpha}$

6. Relat	ionships between price lev	els: r_H &	w _H for P	$_{H}$ and r_{F}	$\& w_F$ fo	r <i>P _F</i>	Rybezynski
For H,	$P_{H}=a_{KH}r_{H}+a_{LH}w_{H}$ When real	The el	The elasticity of substitution i				
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$ r_H	r_F	w_H	w_F	P_{H}	P_F	$p = P_H / P_F$
Case 1.	Total						
	H: capital-goods 0.06112		5.6603		1		1
	F: consumption-goods	0.04657		3.8072			1
Case 2.	Total						
	H: capital-goods 0.05094		5.6603		1		1
	F: consumption-goods	0.05094		3.8072			1
Case 3.	Total						
	H: capital-goods 0.06380		2.2777		1		1
	F: consumption-goods	0.04542		5.5226			l

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T14 Case 2. L. desusses in a		n aaada k	109/				Um	wa [1962]
T14 Case 3. L decreases in co Country=capital-goods+con	-	.,	-		$\Delta Y(0)/Y(0)$	0.00020		$(1962)^{1-\alpha} (\Omega(0))^{1-\alpha}$
, , , ,	$S_{\Pi}(0)$	-goods: 1 D(0)		W(0)	$\frac{\Delta Y(0)/Y(0)}{Y(0)}$	-0.00939 S(0)		,
	З _П (0) 300	200	П(0) 500	5594	6094	1850	$S_{H}(0)$	A(0)
	k(0)		500 s				1550	3.9855
	7.5799	y(0) 4.7060	s 0.30356	s _П 0.6000	S _H	s _{SП/Y} 0.04923	s _{SH/Y} 0.25434	w(0) 4.3199
	1.5799	4.7000	0.30356	0.0000	0.26751		0.25454	4.3199
H: capital-goods	E (0)	D(0)	Π(0)	W/O)	$\Delta Y_{H(0)}/Y_{H(0)}$		G (0)	. (0)
n L(0) K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{\rm H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755 479.98 2944.80	131.52	56	187.88	1093.26	1281.14	734.45	602.93	2.0457
$\alpha \qquad \Omega_{\rm H}(0) \qquad r_{\rm H(0)}$	k(0)	y(0)	\$ 0.57220	s _Π	s _H	S _{SII/Y}	S _{SH/Y}	W _{H(0)}
0.14665 2.29857 0.06380	6.1352	2.6691	0.57328	0.7000	0.52446	0.10266	0.47062	2.2777
F: consumption-goods	$\Delta L/L$:	-0.1		11(0)	$\Delta Y_{F(0)}/Y_{F(0)}$		G (0)	
n L(0) K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{F}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755 815.02 6871.20	168.48	143.64	312.12	4500.99	4813.11	1115.55	947.07	5.1430
$\alpha \qquad \Omega_{\rm F}(0) \qquad r_{\rm F(0)}$	k(0)	y(0)	S	SП	s _H	S _{SII/Y}	S _{SH/Y}	W _{F(0)}
0.06485 1.42760 0.04542	8.4308	5.9055	0.23177	0.5398	0.20391	0.03501	0.19677	5.5226
					$Y_{H(0)}/Y_{F(0)}$	0.26618	Ω	$H(0) > \Omega_{F(0)}$
7. The neutrality of finance			coeffcient	x=r/w	ke*=Ω'	^{*^} (1/(1-α))	x _e */x	$_{0}=k(0)/ke^{*}$
r CB goal see	r_M^* at β^*	$r^{*}/r_{M^{*}}$	$c_{CB} {=} r_M {}^{*} / r_{CB}$	α_x	$x_0 = \alpha_x / k (\theta$	ke*	$x_e^* = \alpha_x / ke^*$	x_0/x_e^*
Case 1. Total 0.0303	0.0333	1.5294	1.09992	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods 0.0329	0.0362	1.6886	1.09988	0.0817	0.0108	1.2566	0.0650	0.1662
F: consumption-goo 0.0290	0.0319	1.4612	1.09994	0.0928	0.0122	1.9283	0.0481	0.2541
goal seek				$\alpha_x = \alpha/(1-\alpha)$				
Case 2. Total 0.0303	0.0333	1.5294	1.09993	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods 0.0270	0.0275	1.7148	1.09970	0.0544	0.0135 0.0113	1.0143	0.0537	0.2515
F: consumption-goo 0.0316	0.0357	1.4634	1.10090	0.1102	0.0115	2.0977	0.0525	0.2144
Georg 2 (Testal) 0.0206	0.0227	1.5000	1 00002	0.0004	0.0117	1 (000	0.0522	0.2105
Case 3. Total 0.0306 H: capital-goods 0.0310	0.0337 0.0472	1.5282 1.8735	1.09993 1.09987	0.0894 0.1719	0.0117 0.0133	1.6808 2.6520	0.0532 0.0648	0.2195 0.2054
H: capital-goods 0.0310 F: consumption-goo 0.0307	0.0472	1.8753	1.09987	0.0693	0.0133	1.4633	0.0648	0.2034
Note: When the effective labou								
8. Data for the Hecksher-C								
$p=P_M/P_F=1$ k(0)	$\Delta k/k(0)$	UCZYHSKI	sigma		w(0)/r(0)		k/(w/r)	$\alpha_x(w/r)$
$\frac{\mathbf{p} \cdot \mathbf{r}_{M} \mathbf{r}_{F} \mathbf{r}}{\text{Case 1. Total}} = \frac{\mathbf{k}(0)}{7.5799}$		w/r)/(w/r)	sigma	4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods 7.5619	0.0000	0.0000	#DIV/0!	5.6603	92.60	0.0117	0.0885	7.5619
F: consumption-goo 7.5877	0.0000	0.0000	#DIV/0!	3.8072	81.75	0.0100	0.0928	7.5877
1. consumption goo 7.5677	0.0000	0.0000	"DI110.	5.0072	01.75		$/(1-\alpha)=\alpha_x$	=k(0)
Case 2. Total 7.5799				4.3645	85.68	0.0117	0.0885	7.5799
H: capital-goods 6.0495	-0.2000	0.1999	1.0003	5.6603	111.12	0.0090	0.0544	6.0495
F: consumption-goo 8.2380	0.0857	(0.0857)	1.0002	3.8072	74.74	0.0134	0.1102	8.2380
- · · · · · · · · · · · · · · · · · · ·		()						
Case 3. Total 7.5799				4.3199	84.81	0.0118	0.0894	7.5799
H: capital-goods 6.1352	-0.1887	(0.6145)	-0.3070	2.2777	35.70	0.0280	0.1719	6.1352
F: consumption-goo 8.4308	0.1111	0.4872	-0.2281		121.58	0.0082	0.0693	8.4308
Note: When the effective labou								
Rybczenski [1955] only holds								/
9. Introduction of relative				ality [.Jor	es. R. W	. 19651	S-Samuel	son [1941]
	-		-		=əY _F /əL _F	-		• •
Marginal productivity		r _{F(margi.Pro.)}		W F(matgi.pro.)	P_{H}	P_{F}	$p = P_H / P_F$	
Case 1. Total	0.05094		4.3645					for r & w
H: capital-goods	0.06112	0.04/25	5.6603	2.0075	1		1	0.8334
F: consumption-good		0.04657	4.2545	3.8072		1		1.0438
Case 2. Total	0.05094		4.3645		,		1 0000	1.0937
H: capital-goods	0.05094	0.05094	5.6603	3.8072	1	1.0000	1.0000	0.9754
F: consumption-good	0.05094	0.03094	4.3199	3.8072		1.0000		0.4024
H: capital-goods	0.06380		2.2777		1.0000		1.0000	1.0000
F: consumption-good		0.04542		5.5226	1.0000	1.0000	1.0000	1.4506
							, i	

T15 Case Country=	Find A(0)=k(0	lay [1960] $1^{1-\alpha}/\Omega(0)$								
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	300	200	500	5652	6152	2500	2200	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.40637	0.6000	0.37594	0.04876	0.35761	4.3645
H: capita	l-goods	0.3	s=S/Y	0.40637	0.36	0.39		0.33		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	526.25	2944.80	126.00	54	180.00	2204.28	2384.28	825.00	699.00	3.9784
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	s _{SH/Y}	w _{H(0)}
0.07549	1.23509	0.06112	5.5958	4.5307	0.34602	0.7000	0.30953	0.05285	0.29317	4.1886
F: consur	nption-go	oods	1-s	0.59363						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	· Π(0)	W(0)	$Y_F(0)$	S(0)	$S_H(0)$	A(0)
0.00755	768.75	6871.20	174.00	146.00	320.00	3447.72	3767.72	1675.00	1501.00	4.0691
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	s _H	$s_{S\Pi/Y}$	S _{SH/Y}	$W_{F(0)}$
0.08493	1.82370	0.04657	8.9382	4.9011	0.44457	0.5438	0.41767	0.04618	0.39838	4.4848
Cases correspond with Hecksher-Ohlin by region. $Y_{H(0)}/Y_{F(0)}$ 0.63282									Ω	_{H(0)} <Ω _{F(0)}

1. Basic variables and parameters unde	r convergence	(delta=alpha)	

	$g_Y *= g_K^*$	g_A^*	g_y^*	$arOmega^*$	r^*	i	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
Case 1. Total	0.1363	0.1174	0.1278	1.5956	0.0509	0.33485	0.6494	0.00755	0.08127
H: capital-goods	0.1367	0.1185	0.1282	1.2351	0.0611	0.28738	0.5876	0.00755	0.07549
F: consumption-goo	0.1361	0.1167	0.1276	1.8237	0.0466	0.36489	0.6801	0.00755	0.08493
Case 2. Total	0.1363	0.1174	0.1278	1.5956	0.0509	0.33485	0.6494	0.00755	0.08127
H: capital-goods	0.1235	0.1092	0.1151	1.0136	0.0509	0.23439	0.5342	0.00755	0.05163
F: consumption-goo	0.1416	0.1199	0.1331	1.9490	0.0509	0.39585	0.6972	0.00755	0.09927
Case 3. Total	0.1368	0.1177	0.1283	1.6107	0.0509	0.33802	0.6517	0.00755	0.08204
H: capital-goods	0.2056	0.1677	0.1966	2.2986	0.0638	0.64029	0.7380	0.00755	0.14665
F: consumption-goo	0.1123	0.0972	0.1040	1.4276	0.0454	0.25757	0.6225	0.00755	0.06485

2. Basic variables and parameters under the current situation (delta>alpha)

	g Y(a)	g K(a)	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y (0)
Case 1. Total	0.0800	0.3000	0.0487	0.0718	0.0893	0.85223	-0.2028	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0292	0.0322	0.0911	0.89571	-0.3081	5.5958	4.5307
F: consumption-goo	0.0478	0.0960	0.0327	0.0399	0.0878	0.90979	-0.2297	8.9382	4.9011
For min capital goo	od growth	0.0509							
Case 2. Total	0.0800	0.3000	0.0487	0.0718	0.0893	0.85223	-0.2028	7.5799	4.7506
H: capital-goods	0.0400	0.4000	0.0122	0.0322	0.0963	0.94439	-0.4102	4.4766	4.4167
F: consumption-goo	0.0479	0.0882	0.0323	0.0400	0.0800	0.92182	-0.2246	9.7043	4.9792
-			_						
Case 3. Total	0.0800	0.3000	0.0485	0.0718	0.0890	0.85461	-0.2029	7.5799	4.7060
H: capital-goods	0.0400	0.4000	-0.0251	0.0322	0.0634	1.03436	-0.2963	4.8826	2.1242
F: consumption-goo	0.0466	0.1075	0.0326	0.0388	0.0992	0.86305	-0.2406	9.9313	6.9566
$g_{\Lambda(\alpha)} = g_{\lambda(\alpha)} - \alpha g_{\lambda(\alpha)} - (1 - \alpha) g_{\lambda(\alpha)}$	α)n d	lelta=(n+	$\chi(i-i\beta*-n))$	$(i(1-B^*))$		$1 - ((1/i))(g_{s})$	k(0)^(δ-	-a))	

 $g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n \qquad delta = (n + \alpha(i - i\beta * - n))/(i(1 - \beta *)) \beta_{actual(\delta > \alpha)} = 1 - ((1/i)(g_{A(a)}k(0)^{\wedge}(\delta - \alpha)))$

0.1(0) 0.1(.,, . ,			••••				Heckschei	r-Ohlin
3. Relat	ionships between	quantities	s: K _H & I	K _F and I	$L_H \& L_F$	K=(a _{KH} ·y _H)L	H+(a _{KF} -y _F)L _F	K=a _{KH} Y _H +	a _{KF} .Y _F
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			Ун	$\boldsymbol{a_{LH}}{=}1/\boldsymbol{y_{H}}$	$L=(a_{LH}y_{H})L_{H}$	$(a_{LF}, y_F)L_F$	L=a _{LH} .Y _H +a	ι _{LF} .Υ _F
For L,	$a_{LH} = 1/y_H a_{LF} = 1/y_F$	$a_{KH} = \Omega_H$	$a_{KF} = \Omega_F$	У _F	$\boldsymbol{a_{LF}}{=}1/y_F$	L _H &L _F	$Y_H \& Y_F$	$K = K_H + K_F$	L=L _H +L _F
Case 1.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.2351		4.5307	0.22072	526.25	2384.28	2945	526
	F: consumption-go	ods	1.8237	4.9011	0.20404	768.75	3767.72	6871	769
Case 2.	Total	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-goods	1.0136		4.4167	0.22641	526.25	2324.29	2356	526
	F: consumption-go	ods	1.9490	4.9792	0.20084	768.75	3827.71	7460	769
Case 3.	Total	1.6107		4.7060	0.21250	1295	6094	9816	1295
	H: capital-goods	2.2986		2.1242	0.47077	603.13	1281.14	2945	603
	F: consumption-go	ods	1.4276	6.9566	0.14375	691.87	4813.11	6871	692

T15 Case 2. K decreases in capital-goods by 20% Findlay [1960]											
Country=	capital-g	oods+con	sumption-	-goods: T	`=H+F		$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$A(0)=k(0)^{1-\alpha}/\Omega(0)$	
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)	
0.00755	1295	9816	300	200	500	5652	6152	2500	2200	4.0295	
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{SU/Y}	S _{SH/Y}	w(0)	
0.08127	1.59558	0.05094	7.5799	4.7506	0.40637	0.6000	0.37594	0.04876	0.35761	4.3645	
H: capita	l-goods		$\Delta K/K$:	-0.2			$\Delta Y_{H(0)}/Y_{H(0)}$	-0.02516			
n	L(0)	K(0)	S _Π (0)	D(0)	Π(0)	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)	
0.00755	526.25	2355.84	84.00	36	120.01	2204.28	2324.29	660.00	576.00	4.0878	
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s _H	S _{SII/Y}	s _{SH/Y}	w _{H(0)}	
0.05163	1.01358	0.05094	4.4766	4.4167	0.28396	0.7000	0.25711	0.03614	0.24782	4.1886	
F: consur	nption-gt	b oids g goal	seek, wher	e r _H appro	aches r=r _F		$\Delta Y_{F(0)}/Y_{F(0)}$	0.01592			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)	
0.00755	768.75	7460.16	216.00	164.00	379.99	3447.72	3827.71	1840.00	1624.00	3.9735	
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	S _{SH/Y}	$W_{F(0)}$	
0.09927	1.94899	0.05094	9.7043	4.9792	0.48070	0.5684	0.44965	0.05643	0.42428	4.4848	
							$Y_{H(0)}/Y_{F(0)}$	0.60723	Ω	_{H(0)} <Ω _{F(0)}	

4. The Penrose curve, B_K , and the assets valuation ratio, v

4. The remose cu	4. The Fellose curve, B_K , and the assets valuation ratio, V											
	Ω^*	I/K	g _K *	Slope B_K	r^*	r_{M^*}	Slope A	Slope B _K /A	$v = 1/\beta^*$			
Case 1. Total	1.5956	0.2099	0.1363	1.5398	0.0509	0.0331	1.5398	1.0000	1.5398			
H: capital-goods	1.2351	0.2327	0.1367	1.7019	0.0611	0.0359	1.7019	1.0000	1.7019			
F: consumption-goo	1.8237	0.2001	0.1361	1.4704	0.0466	0.0317	1.4704	1.0000	1.4704			
Case 2. Total	1.5956	0.2099	0.1363	1.5398	0.0509	0.0331	1.5398	1.0000	1.5398			
H: capital-goods	1.0136	0.2313	0.1335	1.7327	0.0509	0.0294	1.7327	1.0000	1.8719			
F: consumption-goo	1.9490	0.2031	0.1381	1.4705	0.0509	0.0346	1.4705	1.0000	1.4342			
Case 3. Total	1.6107	0.2099	0.1364	1.5386	0.0514	0.0334	1.5386	1.0000	1.5344			
F: consumption-goo	1.4276	0.2780	0.1333	1.3533	0.0038	0.0338	1.3533	1.0000	1.6065			
H: capital-goods	2.2986	0.2786	0.1475	1.8887	0.0638	0.0338	1.8887	1.0000	1.3549			

5. The relative price level: real vs. nominal (a) Inf. or def (b) (c)										
	r(0)	$r = \partial Yt / \partial Kt$	Py=r(0)/r real	r M(0) given	p _Y =r _{M(0)} /r rea	r_M^* at β^*	(a)/(b)	r CB goal see	(a)/(c)	
Case 1. Total	0.05094	0.05094	1.0000	0.0330	0.6479	0.0331	0.9976	0.0301	1.0972	
H: capital-goods	0.06112	0.06112	1.0000	0.0330	0.5399	0.0359	0.9188	0.0327	1.0105	
F: consumption-goo	0.04657	0.04657	1.0000	0.0330	0.7086	0.0317	1.0419	0.0288	1.1460	
Case 2. Total H: capital-goods F: consumption-goo	0.05094 0.05094 0.05094	0.05094 0.05094 0.05094	1.0000 1.0000 1.0000	0.0330 0.0330 0.0330	0.6479 0.6478 0.6479	0.0331 0.0272 0.0355	0.9976 1.2127 0.9292	0.0301 0.0267 0.0315	1.0972 1.2342 1.0479	
Case 3. Total H: capital-goods F: consumption-goo	0.05094 0.06380 0.04542	0.05094 0.06380 0.04542	1.0000 1.0000 1.0000	0.0330 0.0330 0.0330	0.6479 0.5172 0.7265	0.0335 0.0471 0.0283	0.9848 0.7008 1.1671	0.0304 0.0307 0.0305	1.0861 1.0744 1.0814	

 $\frac{1}{r(real)} = 3Yt/3Kt^{\alpha\alpha^{-1}}Lt^{1-\alpha} \text{ and } w(real) = 3Yt/3Lt^{-(1-\alpha)}AtK^{\alpha}Lt^{\alpha}$

6. Relat	6. Relationships between price levels: $r_H \& w_H$ for P_H and $r_F \& w_F$ for P_F Rybczynski										
For H,	$P_H = a_{KH} \cdot r_H + a_{LH} \cdot w_H$ When real	nominal, th=	e price leve	l is 1.0.	The el	asticity	of substitution is 1.0.				
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$ r_H	r_F	w_H	w_F	P_{H}	P_F	$p = P_H / P_F$				
Case 1.	Total										
	H: capital-goods 0.06112		4.1886		1		1				
	F: consumption-goods	0.04657		4.4848		1	<u> </u>				
Case 2.	Total										
	H: capital-goods 0.05094		4.1886		1		1				
	F: consumption-goods	0.05094		4.4848]					
Case 3.	Total										
	H: capital-goods 0.06380		1.8127		1		1				
	F: consumption-goods	0.04542		6.5055		1	l				

T15 Case	T15 Case 3. L decreases in consumption-goods by 10% Uzawa [1962]											
Country=	=capital-g	oods+con	sumption-	goods: T	`=H+F		$\Delta Y(0)/Y(0)$	-0.00939	A(0)=k(0	$0)^{1-\alpha}/\Omega(0)$		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	S _H (0)	A(0)		
0.00755	1295	9816	300	200	500	5594	6094	2500	2200	3.9855		
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_H	S _{SII/Y}	s _{SH/Y}	w(0)		
0.08204	1.61070	0.05094	7.5799	4.7060	0.41022	0.6000	0.37969	0.04923	0.36100	4.3199		
H: capita	l-goods						$\Delta Y_{H(0)}/Y_{H(0)}$	-0.46267				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)		
0.00755	603.13	2944.80	131.52	56	187.88	1093.26	1281.14	992.50	860.98	1.6834		
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	s_{H}	S _{SII/Y}	s _{SH/Y}	W _{H(0)}		
0.14665	2.29857	0.06380	4.8826	2.1242	0.77470	0.7000	0.74892	0.10266	0.67204	1.8127		
F: consu	nption-ge	oods	$\Delta L/L$:	-0.1			$\Delta Y_{F(0)}/Y_{F(0)}$	0.27746				
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	· Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)		
0.00755	691.87	6871.20	168.48	143.64	312.12	4500.99	4813.11	1507.50	1339.02	5.9944		
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	\mathbf{s}_{Π}	\mathbf{s}_{H}	S _{SII/Y}	s _{SH/Y}	W _{F(0)}		
0.06485	1.42760	0.04542	9.9313	6.9566	0.31321	0.5398	0.28829	0.03501	0.27820	6.5055		
							$Y_{H(0)}/Y_{F(0)}$	0.26618	Ω	$H(0) > \Omega_{F(0)}$		
									-			
7. The n	7. The neutrality of financial assets and the coefficient $x=r/w$ ke*= $\Omega^{*}(1/(1-\alpha))$ x _e */x ₀ =k(0)/ke*											
		r _{CB} goal see	r_M^* at β^*	r*/r _{M*}	$c_{CB} = r_M * / r_{CB}$	α_x	$x_0 = \alpha_x / k (\theta$	ke*	$x_e^* = \alpha_x / k e^*$	x_0/x_e^{*}		

	' CB goal see '	M at p	/ // M*	CCB-IM '/ICB	u _x	$x_0 - \alpha_x / \kappa (0)$	КСт	$x_{e} - \alpha_{x}/\kappa e$	A0/ Ae
Case 1. Total	0.0301	0.0331	1.5398	1.09987	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods	0.0327	0.0359	1.7019	1.09981	0.0817	0.0146	1.2566	0.0650	0.2246
F: consumption-goo	0.0288	0.0317	1.4704	1.09990	0.0928	0.0104	1.9283	0.0481	0.2157
	goal seek			goal seek	$\alpha_x = \alpha/(1-\alpha)$)			
Case 2. Total	0.0301	0.0331	1.5398	1.09988	0.0885	0.0117	1.6629	0.0532	0.2194
H: capital-goods	0.0267	0.0272	1.7327	1.09952	0.0544	0.0182	1.0143	0.0537	0.3399
F: consumption-goo	0.0315	0.0355	1.4705	1.09996	0.1102	0.0096	2.0977	0.0525	0.1820
Case 3. Total	0.0304	0.0335	1.5386	1.09989	0.0894	0.0117	1.6808	0.0532	0.2195
H: capital-goods	0.0307	0.0471	1.8887	1.09979	0.1719	0.0167	2.6520	0.0648	0.2581
F: consumption-goo	0.0305	0.0283	1.3533	1.09992	0.0693	0.0093	1.4633	0.0474	0.1972
Note: When the effect	ctive labour	is used,	the coeffic	ient, x_0 ar	$d x_e$, are o	connected v	vith ke (0)	(see also b	elow).

8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

o. Data for the freeksher Onni, Kybezynski, the Storper Sumuelson, and Econter paradox										
$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(rea	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$	
Case 1. Total	7.5799	(Δ(w/r)/(w/r)		4.3645	85.68	0.0117	0.0885	7.5799	
H: capital-goods	5.5958	0.0000	0.0000	#DIV/0!	4.1886	68.53	0.0146	0.0817	5.5958	
F: consumption-goo	8.9382	0.0000	0.0000	#DIV/0!	4.4848	96.30	0.0104	0.0928	8.9382	
							=α.	$(1-\alpha)=\alpha_x$	=k(0)	
Case 2. Total	7.5799				4.3645	85.68	0.0117	0.0885	7.5799	
H: capital-goods	4.4766	-0.2000	0.1999	1.0003	4.1886	82.23	0.0122	0.0544	4.4766	
F: consumption-goo	9.7043	0.0857	(0.0857)	1.0002	4.4848	88.05	0.0114	0.1102	9.7043	
	5 5500				1 2 1 0 0	04.01	0.0110	0.0004	5 5500	
Case 3. Total	7.5799				4.3199	84.81	0.0118	0.0894	7.5799	
H: capital-goods	4.8826	-0.1275	(0.5854)	-0.2177	1.8127	28.41	0.0352	0.1719	4.8826	
F: consumption-goo	9.9313	0.1111	0.4872	-0.2281	6.5055	143.22	0.0070	0.0693	9.9313	
A					4.4	<i>~</i>		1 1.1 1.40		

Note: When the effective labour is used, the current wage rate and the profit rate are connected with k(0).

Rybczenski [1955] only holds under the condition of H-O.

9. Introduction of relative price level, $p = P_H/P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941] $r_p = r_p(0) = \Im Y_F / \partial K_F$ $r_u(0)_{powing} = p \cdot (\Im Y_U / \partial K_U)$, where $p = P_U/P_F$ $w_F = w_F(0) = \Im Y_F / \partial L_F$ $w_{u(u)powing} = p \cdot (\Im Y_U / \partial L_U)$

$r_F = r_F(0) =$	$= \partial Y_F / \partial K_F r_H(0)_{nomin}$	_{al} =p∙(əY _H /ə	$K_{\rm H}$), where	$e p = P_H / P_F$	$w_F = w_F(0)$	=əY _F /əL _F	W _{H(0)nomin}	_{al} =p·(əY _H /ə	L _H)
	Marginal productivity	r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	P_{F}	$p = P_H / P_F$	Changes (%)
Case 1.	Total	0.05094		4.3645					for r & w
	H: capital-goods	0.06112		4.1886		1		1	0.8334
	F: consumption-goo	ods	0.04657		4.4848		1		1.0438
Case 2.	Total	0.05094		4.3645					1.0937
	H: capital-goods	0.05094		4.1886		1		1.0000	0.9754
	F: consumption-goo	ods	0.05094		4.4848		1.0000		1.0000
Case 3.	Total	0.05094		4.3199					0.4328
	H: capital-goods	0.06380		1.8127		1.0000		1.0000	1.0000
	F: consumption-goo	ods	0.04542		6.5055		1.0000		1.4506

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			n <mark>ave differ</mark> ry+labour				ge rates 6152.00	1		lay [1960] $\int_{-\alpha}^{1-\alpha} \Omega(0)$
n	L(0)	K(0)	S _Π (0)	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	196.47	303.53	500	5652	6152.00	1253.00	1056.53	4.0295
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s_{H}	S _{SII/Y}	s _{SH/Y}	w(0)
0.08127	1.59558	0.05094	7.5799	4.7506	0.20367	0.3929	0.17740	0.03194	0.17174	4.3645
H: capita	l-ample c	ountry	K: 0.7	L W: 0.3						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{H}(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	263.76	2944.80	108.00	72.00	180.00	2204.28	2384.28	413.49	305.49	7.5343
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	sΠ	s _H	S _{S∏/Y}	s _{SH/Y}	$W_{H(0)}$
0.07549	1.23509	0.06112	11.1648	9.0397	0.17342	0.6000	0.13421	0.04530	0.12813	8.3572
F: laour-a	ample cou	intry	K: 0.3	L W: 0.7						
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1031.24	6871.20	88.47	231.53	320.00	3447.72	3767.72	839.51	751.04	3.1100
α	$\Omega_{\rm F}(0)$	$r_{F(0)}$	k(0)	y(0)	s	sΠ	s _H	$s_{S\Pi/Y}$	$s_{\rm SH/Y}$	WF(0)
0.08493	1.82370	0.04657	6.6630	3.6536	0.22282	0.2765	0.20413	0.02348	0.19933	3.3433
When Ω_H	₍₀₎ <Ω _{F(0)} is	s used, the	e model do	es not wo	rk betwee	n r and w	$Y_{H(0)}/Y_{F(0)}$	0.63282	Ω	$H(0) < \Omega_{F(0)}$

1. Basic variables and parameters under convergence	(delta=alr	oha)
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	$g_Y *= g_K^*$	g_A^*	g_y^*	Ω^*	r^*	1	$\beta^{*}{}_{(\delta=\alpha)}$	n	α
Case 1. World	0.0703	0.0572	0.0623	1.5956	0.0509	0.16933	0.6622	0.00755	0.08127
H: capital-ample country	0.0719	0.0590	0.0638	1.2351	0.0611	0.14780	0.6006	0.00755	0.07549
F: labour-ample country	0.0695	0.0562	0.0615	1.8237	0.0466	0.18295	0.6926	0.00755	0.08493
Case 2. World	0.0776	0.0584	0.0695	1.5956	0.1004	0.18216	0.6795	0.00755	0.16020
H: capital-ample country	0.1218	0.0993	0.1134	1.2351	0.1004	0.24975	0.6023	0.00755	0.12400
F: labour-ample country	0.0552	0.0387	0.0473	1.8237	0.1004	0.13938	0.7226	0.00755	0.18310
Case 3. World	0.2045	(0.0296)	0.1955	1.6393	0.7025	0.30559	1.0969	0.00755	1.15157
H: capital-ample country	0.2922	(0.0277)	0.2825	1.5634	0.7025	0.42908	1.0647	0.00755	1.09821
F: labour-ample country	0.1651	(0.0275)	0.1564	1.6742	0.7025	0.24891	1.1106	0.00755	1.17606

	$g_{Y(a)}$	g K(a)	$g_{A(a)}$	$g_{y(a)}$	delta	$\beta_{actual (\delta > \alpha)}$	$\beta * - \beta$	k(0)	y(0)
Case 1. World	0.0800	0.3000	0.0487	0.0718	0.0977	0.70273	-0.0405	7.5799	4.7506
H: capital-ample country_	0.0400	0.4000	0.0292	0.0322	0.1068	0.78710	-0.1865	11.1648	9.0397
F: labour-ample country	0.0215	0.0991	0.0062	0.0139	0.0909	0.96571	-0.2731	6.6630	3.6536
For min capital goo	od growth	0.0509							
Case 2. World	0.0800	0.3000	0.0256	0.0718	-0.1502	0.92504	-0.2455	7.5799	4.7506
H: capital-ample country	0.0400	0.4000	-0.0162	0.0322	0.0452	1.05367	-0.4514	11.1648	9.0397
F: labour-ample country	0.0215	-0.4850	0.1042	0.0139	-0.4889	0.79105	-0.0684	6.6630	3.6536
Case 3. World	0.0800	0.3000	-0.2643	0.0718	45.6596	1227822	-122782	7.5799	4.6238
H: capital-ample country	0.0400	0.4000	-0.3985	0.0322	44.2934	1698641	-169864	11.1648	7.1415
F: labour-ample country	0.0335	51.5281	-60.5650	0.0258	51.1346	3432484	-343248	6.6630	3.9799
$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha g_{K(a)})$	x)n	delta=(n+	$\alpha(i-i\beta^*-n))$	$(i(1-\beta^*))$	βactual(δ>α)	=1-((1/i)(g)	_(a) k(0)^(δ	-α))	

$g_{A(a)} = g_{Y(a)} - \alpha g_{K(a)} - (1 - \alpha)n$	delta= $(n+\alpha(1-1\beta^*-n))/(1(1-\beta^*))$ p _{actual($\delta > \alpha = 1 - ((1/1)(g_{A(a)}K(0)))$}	s-α))
		Stolper-Samuelson

3. Relat	ionships between qu	K=(a _{KH} .y _{H)} L	H+(a _{KF} .y _F)L _F	K=a _{KH} .Y _H +	a _{KF} .Y _F				
For K,	$a_{KH}=\Omega_H$ $a_{KF}=\Omega_F$			УH	$\boldsymbol{a_{LH}}{=}1/y_{H}$	L=(a _{LH} .y _{H)} L	$_{I}^{+}(a_{LF},y_{F})L_{F}$	$L=a_{LH}Y_{H}+$	a _{LF} .Y _F
For L,	$a_{LH}=1/y_{H}$ $a_{LF}=1/y_{F}$	$a_{KH} = \Omega_H$	$a_{KF}=\Omega_{F}$	\mathbf{y}_{F}	$\boldsymbol{a_{LF}}{=}1/\boldsymbol{y_{F}}$	L _H &L _F	$Y_H \& Y_F$	$K = K_H + K_F$	$L=L_H+L_F$
Case 1.	World	1.5956		4.7506	0.21050	1295	6152	9816.00	1295.00
	H: capital-ample country	1.2351		9.0397	0.11062	263.76	2384.28	2945	264
	F: labour-ample country		1.8237	3.6536	0.27370	1031.24	3767.72	6871	1031
Case 2.	World	1.5956		4.7506	0.21050	1295	6152	9816	1295
	H: capital-ample country	1.2351		9.0397	0.11062	263.76	2384.28	2945	264
	F: labour-ample country		1.8237	3.6536	0.27370	1031.24	3767.72	6871	1031
Case 3.	World	1.6393		4.6238	0.21627	1295	5988	9816	1295
	H: capital-ample country	1.5634		7.1415	0.14003	263.76	1883.63	2945	264
	F: labour-ample country		1.6742	3.9799	0.25127	1031.24	4104.20	6871	1031

T16 Case	2. Using 1	r and w wi	ith the prie	ce level	Here, sta	rt from the	proice lev	/el	Find	llay [1960]
World=c	apital-am	ple counti	ry+labour	-ample co	ountry: W	-5473.02	$\Delta Y(0)/Y(0)$	0.00000	A(0)=k(0	$D^{1-\alpha}/\Omega(0)$
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	Y(0)	S(0)	$S_{H}(0)$	A(0)
0.00755	1295	9816	591.32	394.21	985.54	-6458.56	6152.00	1252.96	661.64	3.4342
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	s_{Π}	s _H	S _{STI/Y}	s _{SH/Y}	w(0)
0.16020	1.59558	0.10040	7.5799	4.7506	0.20367	0.6000	0.11899	0.09612	0.10755	(4.9873)
H: capita	l-ample c	ountry					$\Delta Y_{H(0)}/Y_{H(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{H}(0)$	S(0)	S _H (0)	A(0)
0.00755	263.76	2944.80	177.40	118.26	295.66	-1315.44	2384.28	700.00	522.60	6.7022
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s _Π	s _H	S _{STI/Y}	s _{SH/Y}	W _{H(0)}
0.12400	1.23509	0.10040	11.1648	9.0397	0.29359	0.6000	0.23681	0.07440	0.21919	(4.9873)
F: laour-a	ample cou	Using goa	l seek, wh	ere r _M app	roaches r=	r _F	$\Delta Y_{F(0)}/Y_{F(0)}$	0.00000		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_F(0)$	S(0)	S _H (0)	A(0)
0.00755	1031.24	6871.20	413.93	275.95	689.88	-5143.12	3767.72	552.96	139.03	2.5817
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s _Π	s _H	S _{SII/Y}	S _{SH/Y}	w _{F(0)}
0.18310	1.82370	0.10040	6.6630	3.6536	0.14676	0.6000	0.04146	0.10986	0.03690	(4.9873)
When $\Omega_{\rm H}$	₍₀₎ <Ω _{F(0)} is	s used, the	model do	es not wo	rk betwee	n r and w.	$Y_{H(0)}/Y_{F(0)}$	0.63282	Ω	$H_{(0)} < \Omega_{F(0)}$

4. The Penrose curve, B_K , and the assets valuation ratio, v

	Ω^*	I/K	g _K *	Slope B_K	r*	r_{M^*}	Slope A	Slope B _K /A	$v = l/\beta^*$
Case 1. World	1.5956	0.1061	0.0703	1.5101	0.0509	0.0337	1.5101	1.0000	1.5101
H: capital-ample country	1.2351	0.1197	0.0719	1.6649	0.0611	0.0367	1.6649	1.0000	1.6649
F: labour-ample country	1.8237	0.1003	0.0695	1.4439	0.0466	0.0323	1.4439	1.0000	1.4439
Case 2. World	1.5956	0.1142	0.0762	1.4988	0.1004	0.0670	1.4988	1.0000	1.4716
H: capital-ample country	1.2351	0.2022	0.0754	2.6806	0.1004	0.0375	2.6806	1.0000	1.6603
F: labour-ample country	1.8237	0.0764	0.0769	0.9936	0.1004	0.1010	0.9936	1.0000	1.3838
Case 3. World H: capital-ample country F: labour-ample country	1.6393 1.5634 1.6742	0.1864 0.2745 0.1487	(0.3727) (0.5980) (0.3143)	-0.4589	0.7217 0.7025 0.7025	(1.4429) (1.5306) (1.4852)	(0.5002) (0.4589) (0.4730)	1.0000	0.9116 0.9393 0.9004

5. The relative price level: real vs. nominal (a) Inf or def (b) (c)									
	r(0)	r=əYt/əKt	$P_{Y}=r(0)/r_{real}$	r M(0) given	py=rM(0)/r real	r_M^* at β^*	(a)/(b)	r CB given	(a)/(c)
Case 1. World	0.05094	0.05094	1.0000	0.0330	0.6479	0.0337	0.9783	0.027	1.2222
H: capital-ample country	0.06112	0.06112	1.0000	0.0330	0.5399	0.0367	0.8989	0.027	1.2222
F: labour-ample country	0.04657	0.04657	1.0000	0.0330	0.7086	0.0323	1.0231	0.027	1.2222
Case 2. World	0.10040	0.10040	1.0000	0.0325	0.3237	0.0682	0.4763	0.027	1.2037
H: capital-ample country	0.10040	0.10040	1.0000	0.0300	0.2988	0.0605	0.4961	0.027	1.1111
F: labour-ample country	0.10040	0.10040	1.0000	0.0330	0.3287	0.0726	0.4548	0.027	1.2222
Case 3. World	0.70246	0.70246	1.0000	0.0310	0.0441	0.7917	0.0392	0.027	1.1481
H: capital-ample country	0.70246	0.70246	1.0000	0.0330	0.0470	0.7479	0.0441	0.027	1.2222
F: labour-ample country	0.70246	0.70246	1.0000	0.0300	0.0427	0.7802	0.0385	0.027	1.1111
	1 0								

Note: If the price level of output, P_{γ} , is one, real=nominal and the elasticity of substitution, σ , is always 1.0. r(real)= $\partial Y t/\partial K t = \alpha A t K t^{\alpha^{\alpha+1}} L t^{-\alpha}$ and w(real)= $\partial Y t/\partial L t = (1-\alpha)A t K t^{\alpha} L t^{\alpha}$

6. Rela	tionships between price levels: $r_H \& w_H$ for P_H and r_F	& w _F for P _F	Stolper-Samuelson
For H	$P_{ij} = a_{kij} r_{ij} + a_{ij} w_{ij}$ When real=nominal, the price level is 1.0	The elasticity	of substitution is 1.0.

FOI II,	I H_aKHIH, aLH.MH	when real-nonninal, the price level is 1.0.				The elasticity of substitution is 1.0.			
For F,	$P_F = a_{KF} \cdot r_F + a_{LF} \cdot w_F$	r_H	r_F	w_H	w_F	P_{H}	P_{F}	$p = P_H / P_F$	
Case 1.	World	0.05094		4.3645		1.0000		1.0000	For p,
	H: capital-ample country	0.06112		8.3572		1		1	using goal
	F: labour-ample country		0.04657		3.3433		1		seek
Case 2.	World	0.10040		-4.9873		-0.8896		-0.8896	Y(0)
	H: capital-ample country	0.10040		(4.9873)		1.05		1.05	(5473)
	F: labour-ample country		0.10040		(4.9873)		1		6152
Case 3.	World	0.70246		-0.7007		1.0000		1.0000	Y(0)
	H: capital-ample country	0.70246		(0.7007)		1.00009		1.00009	5988
	F: labour-ample country		0.70246		(0.7007)		1		5988

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T16 Case 3. Using r and w with the price level Here, start from the proice level									Findlay [1960]	
World=c	World=capital-ample country+labour-ample c					5988.00	$A(0) = k(0)^{1-\alpha} / \Omega(0)$			
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	П(0)	W(0)	Y(0)	S(0)	$S_{\rm H}(0)$	A(0)
0.00755	1295	9816	4137.22	2758.15	6895.37	-907.37	5987.82	1252.96	-2884	0.4488
α	$\Omega(0)$	r(0)	k(0)	y(0)	s	sΠ	s _H	S _{SII/Y}	s _{SH/Y}	w(0)
1.15157	1.63933	0.70246	7.5799	4.6238	0.20925	0.6000	-1.55856	0.69094	-0.48169	(0.7007)
H: capita	l-ample c	ountry					$\Delta Y_{H(0)}/Y_{H(0)}$	-0.20998		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	Π(0)	W(0)	$Y_{\rm H}(0)$	S(0)	S _H (0)	A(0)
0.00755	263.76	2944.80	1241.17	827.44	2068.61	-184.81	1883.63	700.00	(541.17)	0.5047
α	$\Omega_{\rm H}(0)$	r _{H(0)}	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	s _{SH/Y}	W _{H(0)}
1.09821	1.56337	0.70246	11.1648	7.1415	0.37162	0.6000	-0.84234	0.65892	-0.28730	(0.7007)
F: laour-a	ample cou	intry					$\Delta Y_{F(0)}/Y_{F(0)}$	0.08930		
n	L(0)	K(0)	$S_{\Pi}(0)$	D(0)	$\Pi(0)$	W(0)	$Y_F(0)$	S(0)	$S_{H}(0)$	A(0)
0.00755	1031.24	6871.20	2896.06	1930.70	4826.76	-722.57	4104.20	552.96	(2343.10)	0.4277
α	$\Omega_{\rm F}(0)$	r _{F(0)}	k(0)	y(0)	s	s_{Π}	s _H	S _{SII/Y}	s _{SH/Y}	w _{F(0)}
1.17606	1.67419	0.70246	6.6630	3.9799	0.13473	0.6000	-1.93943	0.70563	-0.57090	(0.7007)
When $\Omega_{\rm H}$	₍₀₎ <Ω _{F(0)} is	s used, the	e model da	es not wo	rk betweei	ı <i>r</i> and w	$Y_{H(0)}/Y_{F(0)}$	0.45895	<u>Ω</u>	$H(0) < \Omega_{F(0)}$

7. The neutrality of financial assets and the coeffcient x=r/w ke*= $\Omega^{*}(1/(1-\alpha))$ $x_e^*/x_0=k(0)/ke^*$

	$r_{CB \text{ given}} r_M^*$ at β^*	$r^{*}/r_{M^{*}}$ c _{CB} = r_{M}^{*}/r_{CB}	$\alpha_x \qquad x_0 = \alpha_x / k (0)$	ke* $x_e^* = \alpha_x / ke^* x_0 / x_e^*$						
Case 1. World	0.027 0.0337	1.5101 1.24929	0.0885 0.0117	1.6629 0.0532 0.2194						
H: capital-ample country	0.027 0.0367	1.6649 1.35976	0.0817 0.0073	1.2566 0.0650 0.1125						
F: labour-ample country	0.027 0.0323	1.4439 1.19458	0.0928 0.0139	1.9283 0.0481 0.2894						
			$\alpha_x = \alpha/(1-\alpha)$							
Case 2. World	0.027 0.0682	1.4988 2.48101	0.1908 0.0252	1.7443 0.1094 0.2301						
H: capital-ample country	0.027 0.0605	2.6806 1.38724	0.1416 0.0073	1.2726 0.1112 0.0658						
F: labour-ample country	0.027 0.0726	0.9936 3.74243	0.2241 0.0139	2.0866 0.1074 0.1297						
Case 3. World	0.027 0.7917	(0.5002) -53.439	(7.5978) 0.0117	0.0383 (198.15) (0.0001)						
H: capital-ample country	0.027 0.7479	(0.4589) -56.688	(11.182) 0.0073	0.0106 (1058.2) (0.0000)						
F: labour-ample country 0.027 0.7802		(0.4730) -55.006	(6.6800) 0.0139	0.0536 (124.73) (0.0001)						
Note: When the effective labour is used, the coefficient, x_0 and x_e , are connected with ke(0) (see also below).										

Note: When the effective labour is used, the coefficient, x_0 and x_e , are connected with ke(0) (see also below 8. Data for the Hecksher-Ohlin, Rybczynski, the Stolper-Samuelson, and Leontief paradox

o. Data for the fit	chonci-c	Junn, Ky	DCLynski	per-Samuelson, and Econtier paradox						
$p=P_M/P_F=1$	k(0)	$\Delta k/k(0)$		sigma	w(0)=w(real	w(0)/r(0)	r(0)/w(0)	k/(w/r)	$\alpha_x(w/r)$	
Case 1. World	7.5799	(Δ(w/r)/(w/r)		4.3645	85.68	0.0117	0.0885	7.5799	
H: capital-ample country	11.1648	0.0000	0.0000	#DIV/0!	8.3572	136.72	0.0073	0.0817	11.1648	
F: labour-ample country	6.6630	0.0000	0.0000	#DIV/0!	3.3433	71.79	0.0139	0.0928	6.6630	
							=0	$\alpha/(1-\alpha) = \alpha_x$	=k(0)	
Case 2. World	7.5799				(4.9873)	-49.67	-0.0201	-0.1526	-9.4756	
H: capital-ample country	11.1648	0.0000	(1.3633)	0.0000	(4.9873)	-49.67	-0.0201	-0.2248	-7.0317	
F: labour-ample country	6.6630	0.0000	(1.6919)	0.0000	(4.9873)	-49.67	-0.0201	-0.1341	-11.1340	
Case 3. World	7.5799				(0.7007)	-1.00	-1.0026	-7.5993	7.5784	
H: capital-ample country	11.1648	0.0000	(1.0073)	0.0000	(0.7007)	-1.00	-1.0026	-11.1933	11.1541	
F: labour-ample country 6.6630 0.0000		0.0000	(1.0139)	0.0000	(0.7007)	-1.00	-1.0026	-6.6800	6.6630	
Note: When the effe	Note: When the effective labour is used, the current wage rate and the profit rate are connected with $k(0)$.									

 $r = (y_F P_F - y_H P_H) / (\Omega_F y_F - \Omega_H y_H) \qquad \qquad w = (y_F y_H (\Omega_H P_F - \Omega_F P_H)) / (\Omega_H y_H - \Omega_F y_F)$

9. Introduction of relative price level, $p = P_H / P_F$: Duality [Jones, R. W., 1965] S-Samuelson [1941]

$r_F = r_F(0) = \partial Y_F / \partial K_F$	$r_{H}(0)_{nominal} = p \cdot (\partial Y_{H} / \partial K_{I})$	_i), where p=P _H /P _F	$w_F = w_F(0) = \partial Y_F / \partial L_F$	$W_{H(0)nominal} = \mathbf{p} \cdot (\partial Y_H / \partial L_H)$
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	Marginal productivit	y r _{H(marg.pro.)}	r _{F(margi.Pro.)}	W H(margi.Pro.	W F(matgi.pro.)	P_{H}	$P_F p = P$	P_H/P_F	hanges (%)
Case 1.	Total	0.05094		4.3645		1.0000	1.0	0000 f	for r & w
	H: capital-goods	0.06112		8.3572		1		1	(3.8404)
	F: consumption-go	ods	0.04657		3.3433		1		11.4912
Case 2.	Total	-0.11286		5.6060		-0.8896	-0.3	8896	2.1559
	H: capital-goods	-0.23474		11.6605		-0.4277	(0.4	4277)	15.0836
	F: consumption-go	ods	0.10040		(4.9873)		1		1.3953
Case 3.	Total	0.70244		(0.7007)		1.0000	1.0	0000	(0.0838)
	H: capital-goods	0.70240		(0.7006)		1.0001	1.0	0001	(1.4917)
	F: consumption-go	ods	0.70246		(0.7007)		1		(0.2096)