



The Dollar Game

Play scenarios to
grow a local economy

Paul A. Lewin and Willem J. Braak



The Dollar Game

The Dollar Game teaches the fundamentals of a local economy through a rapid succession of interactive scenarios that demonstrate how a local economy creates wealth.

Players will do all of the following:

- Gain economic insights that are very difficult to replicate in a traditional classroom setting
- Internalize complex economic concepts like value added and wealth concentration
- Experience how import and export activities can fundamentally alter the economy's structure

Six rounds

Each round introduces important concepts and raises questions that prime productive discussions:

Rounds 1–3 focus on growth from within, without trade or outside help. Concepts include value added, productivity, and wealth distribution.

Round 4 shows the risks and rewards of export growth.

Round 5 illustrates the effect of distant ownership of a value-adding activity.

Round 6 addresses the impact of commuting from one community to another for work.

Application of concepts

An understanding of these concepts paves the way for discussions of historic developments in a local economy and for defining strategies for durable growth.

Game materials in this package

Facilitator manual

Facilitator instructions

Player instructions

Team score sheet

Token templates (3)

Labor

Materials

Value added

Role card templates (5)

Labor Provider

Materials Provider

Processing Center

Trading Center

Bank

Dollar bill templates

Gray

Green

Yellow

Black (to print on colored paper)

Other game materials

PowerPoint slideshow (see separate file)

Authors

Paul A. Lewin, Extension Community Economic Development Specialist, Department of Agricultural Economics and Rural Sociology, University of Idaho, plewin@uidaho.edu

Willem J. Braak, Independent Consultant, Carmel-by-the-Sea, California, and former Extension Educator, University of Idaho

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plewin@uidaho.edu | wjbraak@ecsinsights.org

Facilitator Manual

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Purpose

Communities often ask, “What kind of tax incentive or public investment is most effective in bringing in industry?” Instead, they should first ask, “Is bringing in industry the most effective way to increase and stabilize incomes in this community in the long run?” Or, indeed, “What alternatives exist for improving the income status of the poor and unemployed in our community?”¹

The Dollar Game helps community educators teach about asking the right questions since those questions bring a better understanding of the local economy. The Dollar Game can also help to answer contemporary questions such as, What impact will a large supercenter have on our downtown? or, How useful is investing in a regional food corridor? The game can also help frame an in-depth class or workshop on community economics.

Participants play scenarios that demonstrate how a local economy creates wealth and how import and export activities can fundamentally alter the economy’s structure. Players internalize complex economic concepts like value added, induced economic impact, import substitution, and wealth concentration. An understanding of these concepts then paves the way for discussions of historic developments in a local economy and for defining strategies for durable growth.

Limitations

The game is a gross simplification of reality, leaving out many factors and complexities that underpin a true economy. For example, in an effort to keep the game simple, at some point the game dictates an import from the outside at no cost advantage. The fact that the game simplifies a real economy should be noted by the facilitator and used as an opportunity to introduce participants to the underlying concepts and complexities in each scenario.

Game Structure

Number of participants

The Dollar Game can be used in workshops and classes with as few as four individuals to play a single economy and with as many as 30 individuals to play competing economies. The preferred setting uses multiple teams of five individuals per team, thus introducing an element of competition. Too many teams may unduly extend the plenary sessions, however. The desired workshop or class size is therefore 10 to 25 people, or two to five teams of five people.

Game rounds and duration

The Dollar Game includes six scenarios, or rounds. The first three scenarios use an “island economy,” a self-reliant community disconnected from other economies. The second three scenarios explore a modern economy trading with other communities. The workshop switches between plenary and group sessions, with teams playing rounds in the group sessions and reporting back in the plenary sessions. The full game lasts 2 to 3 hours if rounds are played with facilitated plenary discussions and in quick succession. Since the scenarios build on each other, workshops can be tailored to accommodate shorter time frames by playing fewer rounds.

¹ Weber, Bruce A. 1987. Extensions role in economic development. *Journal of Extension* 25 (1). <http://www.joe.org/joe/1987spring/a5.php/>

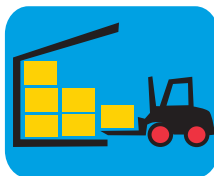


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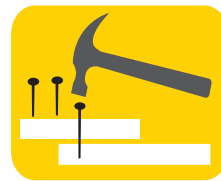
Roles

Participants are divided into teams of four to six people (with five individuals as ideal). Each team represents a simplified economy with a Trading Center, Labor and Materials providers, Bank, and Processing Center.

The Processing Center becomes the center of wealth creation. It can be nicknamed “farm” or “factory” or anything familiar to the community to clarify the concept. For example, the game was first piloted in a community with a history of timber production, and the Processing Center was therefore labeled a sawmill.



Trading Center



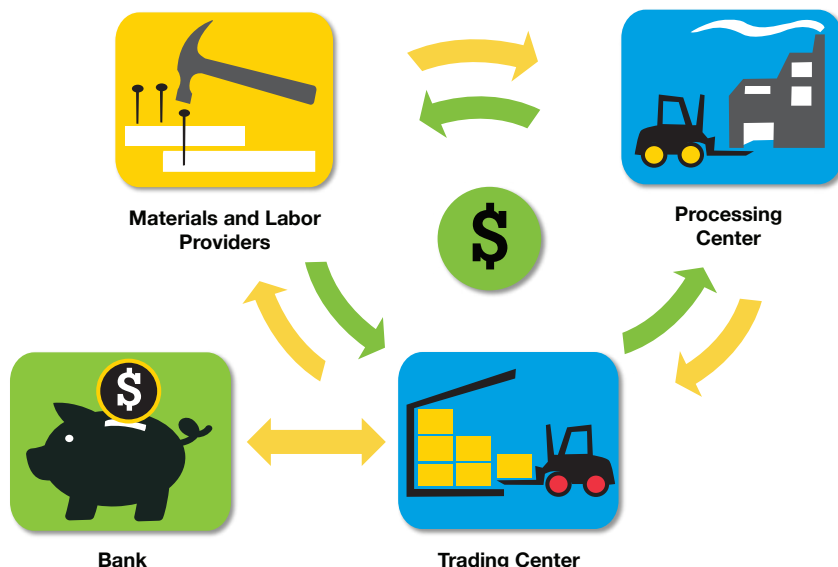
Labor and Materials Provider



Bank



Processing Center



Exchange flows, tokens, and dollars

As in any modern economy, the teams experience two exchange flows: a flow of goods and services and a flow of money that initiates or rewards the earlier flow of goods and services. The game uses tokens to represent the flow of goods and services (right).

For example, in order for the Labor Provider to be able to work, that player first needs to pay \$1 to the Trading

Center to acquire a labor token (representing food and supplies). Only then can the player contract with the Processing Center, providing it with the labor token in exchange for \$1.

A key instructional element of the Dollar Game is that a dollar can have different colors. The starting capital of the community is in gray dollars. Value-added dollars introduced during the game are green. Money coming into the community from elsewhere (export dollars) are yellow.

Tokens



Dollars





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Game pedagogy

The game uses a rapid succession of scenarios to engage the players and allow them to “thin-slice” relatively complex concepts. Through game observations and experiences, players gain insights that are very difficult to replicate in a traditional classroom setting. Each round is designed to raise questions that prime a productive discussion in the round evaluation.

For the benefit of the facilitator, we discuss the target concepts for each simulation later in this manual. Other than when suggested in the discussion, we recommend facilitators use the background discussion sparsely, and *only after* playing the simulation.

Game Materials

Note: Materials the facilitator can make from provided templates are indicated.

Game kit (one kit per team)

Dollars (Templates provided. Use a color printer and plain copier paper, or print in black and white on colored paper.)

- 9 gray dollars representing the community’s wealth at the start of the game
- 23 green dollars representing wealth created during the game (value added)
- 64 yellow dollars representing new money coming into the community from the sale of services or products to non-community members (export dollars)

Note: The instructor should keep additional green and yellow dollar on hand in case players grow their economies very quickly—when the processing facility offers large bonuses, for example, or when they become very efficient exporters.

Tokens (Templates provided. Use a color printer and white Avery 5371 business card stock or equivalent, or white index card stock.)

- 10 labor tokens
- 10 materials tokens
- 16 value added tokens

Role cards (Templates provided. Use a color printer and preferably index card paper.)

- Labor Provider
- Materials Provider
- Processing Center
- Trading Center
- Bank

These cards remind the players of the rules and the tasks of their role.

Team score sheet (Template provided. Print on plain white paper.)

The sheet helps teams keep track of what happens to their economies during the game.



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Set of player instructions (one set per team)

Instructions for each round, or seven sheets per set (Templates provided. Print on plain white paper.)

Teams start each round together, but the player instructions allow the teams to work independently, freeing the facilitator to answer questions and help teams along.

Set of facilitator sheets:

Instructions for each round, or seven sheets (Print on plain paper.)

PowerPoint slideshow

For the facilitator to use in guiding the game.

Timer

For counting minutes (a smartphone can do the job).

White board or flipover charts

We strongly suggest the facilitator have a white board or, better still, flipover charts to keep score of the performance of individual teams.

Getting Started

Which rounds to play

Rounds can be played separately, but the following sets provide natural breaks:

Rounds 1 through 3 provide an overview of “growth from within” (organic growth), in other words, economic growth without trade or outside help. It provides a good introduction to basic economics: value-added activities, the money cycle, productivity, and wealth distribution.

Rounds 1 through 4 give a more complete overview of growth strategies. Whereas rounds 1 through 3 are limited to organic growth, round 4 shows the rewards and risks of export growth. Round 4 can also include discussion of a number of advanced concepts discussed later in this manual.

Rounds 1 through 6 allow participants to experience how a community can go from boom (rounds 1 through 4) to bust (initiated by phenomena described in rounds 5 and 6). Round 5 provides material for an initial discussion; round 6 expands on the discussion.

At the end of each round, the game can be reset to the initial conditions, but this is not recommended.



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Game preparation

Each team has the following roles and resources at the start of round 1:

Participant roles	Start-up capital (\$)	Other startup materials (tokens)
Labor Provider = labor	\$3 (gray bills)	
Materials Provider = supplies	\$3 (gray bills)	
Processing Center = the local value-added activity, like a farm, mill, or factory	\$3 (gray bills)	16 value-added tokens
Trading Center = general store or market		10 materials tokens 10 labor tokens
Bank	\$23 (green bills) \$64 (yellow bills)	

To accommodate different group sizes, the team can be adjusted to four members by combining the Bank and Trading Center roles or to six members by separating the roles of Bank and spokesperson.

Round 1: Steady State

Concepts

The first round of the game is a warm-up and anchors the concept that “your spending is my income and my spending is your income” (as Nobel Prize-winning economist Paul Krugman phrased it over and over during the Great Recession). Our island economy is coasting along with stable prices and no changes in exchanged services or goods. Since the economy is isolated from the rest of the world, no money leaves the economy, and no new money enters the community.

Each player starts out with an established starting capital, all in gray dollars. The bank starts with green and yellow dollars, but the bank does NOT play in this round. With no new value added to the economy, everyone ends up with the same number of dollars at the end of the round that they had at the beginning. The money goes around, and we are all “scratching each other’s back.”

Roundup

This round’s evaluation should address two important issues:

1. Can we have an economy in which we are all “scratching each other’s back”? The answer is (a qualified) “yes.” If we look at the world economy, no money comes in or goes out and we all “scratch each other’s back.” If we zoom in we can imagine countries, or even regions, to be quite self-reliant as well.
2. So is our island economy a good economy? We simply do not know without asking community members if they are happy, or if they are hungry. Maybe the island is rocky with



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no fertile soil, with the only food supplied by a reef a mile out into the ocean. The economy is stable, but its residents work 18-plus hours per day to supply the bare minimum in food and shelter. Or maybe our island is a lush sub-tropical paradise where food grows on trees and residents spend 6 hours per day surfing and relaxing.

Round 2: Innovation

Concepts

This round introduces the concept of innovation. It is all about the (overused and underutilized) concept of working smarter. When the farmer went from spade to plow, it freed up time to do other things—work additional land or have more family time. When the automatic washer replaced hours of washing by hand, it freed up time to do other things, such as help the kids with homework. Economists refer to this as increased productivity—adding more value with the same input, or achieving the same value with less input. We will call it “innovation” since the term “productivity” often calls up the (wrong) image of working harder. Innovation does not refer just to machines and inventions. Simplifying the way a permit is processed and issued is innovation in rulemaking; eliminating the need for a permit altogether by implementing simpler but equally effective rules is, again, innovation.

In round 2, the processing facility launches a next-generation (“smarter”) product but continues to sell it for the same price as the original product. An example would be the production of dimensional lumber versus random-sized planks. Community members still build homes with the wood, but the standardized system of dimensional lumber allows them to do it in less time.

Not only does the new product work better for the end user, the new design is also easier to manufacture, needing only half the labor as the previous product. Everyone wins: the community has become more productive with this innovation, and the Processing Center has a higher profit margin.

So how does this show up in our economy? In a barter economy, where people trade goods and services with each other instead of using money, the Processing Center would receive the same amount of goods and services in return for its product, but it would need to barter less away to acquire the (reduced) inputs. The Processing Center would thus have increased spare time, or be able to produce more.

In our money-based economy, banknotes represent value, be it time or effort. Somehow we need to make sure that the money supply keeps pace with that increased value. In our U.S. economy, that is the task of the Federal Reserve. In the game, a simple mechanism mimics this. Every time the Trading Center procures a product (made up of a labor token, materials token, and value-added token) from the Processing Center, it exchanges the value-added token for a new banknote at the local bank, thus perfectly synchronizing the money supply with the value added in the economy. The new banknote is green when it comes from local demand and yellow when it comes from external demand (exports). In this round we do not have exports, so only green dollars are used. There is no functional difference between green and gray dollars. The green dollars do, however, allow us to visualize how our economy increases.



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Roundup

This round's evaluation should address the importance of innovation. The overriding driver in productivity increase, and therefore in economic growth, is innovation, or doing things smarter: going from the spade to the plow or the washtub to the automatic washer, doing permitting online, reducing waste. Regions where need, opportunity, and local know-how keep reinforcing each other, such as Silicon Valley, have sparked tremendous economic growth. These regions resemble "ecosystems" of innovation that steadily grow into strong, interconnected economies leveraged through induced spending and investments from local employees, local government, and the local service sector.

When all is said and done, the players should walk away from The Dollar Game with this understanding: the way to grow an economy organically (from within, without help from government or exports) is through innovation (increased productivity).

Advanced topics

1. With advanced groups or when using the game to frame a more extensive curriculum, this round can be used to discuss the concept of productivity enhancements and investments. Economic theory allows for only two ways to grow an economy from within: through increased productivity or through investment. Investments, or the pooling of savings and resources (not simulated in the game), can enable innovation that is difficult to finance with cash generated through ongoing economic activity and thus it can accelerate wealth creation. Investment, for example, might require getting a loan from the Bank. When the Processing Center starts more products per production cycle (by purchasing multiple labor and materials tokens at a time), this does show the importance of savings and a flexible money supply as well. This concept aids in explaining the importance of bank credits and liquidity.
2. Innovation reaps rewards only if new ideas can pay off. If the outcome of years of trial and error can be easily copied by a competitor, there is very little incentive to invest in innovation. Allowing innovators to have at least some head start over copycats (through, for example, time-limited patent protection or copyrights), is a well-known prerequisite. A workshop or classroom discussion can focus on other factors that touch on this issue of expectation. An example could help provoke thought: if a government ruling intends to stimulate renewable energy, it will do so effectively only if there is (1) a predictable (time) horizon for reaping the benefits from such ruling, (2) a clear field for competitive ideas and competitive advantage, (3) a clear financial incentive for innovative ideas and concepts.
3. Productivity improvements through changes in production methods or product design (form, fit, and function) are often treated (and viewed) as distinct and different. This is partially because classic economics sees both as driving an improved "production function," or a more efficient allocation of factor inputs. The term "production function" tends to bias the layman (and even economists) to think in terms of manufacturing efficiency. The Dollar Game purposefully emphasizes manifestations of innovation through both product design and production methods. After all, modern design and manufacturing principles emphasize the increasing interdependency of design and process. Combining the two manifestations of innovation in one round (round 2) therefore not only helps to condense The Dollar Game and keep it simple, it also emphasizes to the players the ruling principle behind "productivity," i.e., innovation.



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Round 3: Sharing the Wealth

Concepts

This round introduces the concepts of wealth concentration and local demand. Although the economy grew during round 2, the Processing Center was the sole beneficiary of the wealth increase. This is not a coincidence. Wealth concentration is as old as human history. Wealth tends to concentrate since it brings power, status, and greater opportunity to save and invest. Our scenario resembles a feudal economy with the Processing Center dictating the price of inputs. Unless the dictator “shows benevolence,” the region can only hope for more innovation to provide competitive alternatives and choice in employment. This round does not discuss economic or political solutions for wealth concentration. It shows only that wealth concentration is an important issue, however we address it.

Our island economy can beautifully simulate how local demand is determined by the local wealth, that “my spending is your income and your spending is my income.” If the Processing Center wants to sell more products, it will need a community that can afford to buy more products.

By representing the purchasing power of the community as the wealth of Materials and Labor providers, we can simulate the effect of wealth distribution. Materials and Labor providers represent the middle-class in our economy, thus their wealth limits local demand. Their wealth is equal to the sum of the dollars and value of the tokens they hold. Local demand for products is defined as the sum of Labor and Materials providers’ wealth divided by two:

$$\text{Local demand} = \frac{(\text{wealth of Labor Provider} + \text{wealth of Materials Provider})}{2}$$

For example, if the Labor Provider holds three \$1 bills, his wealth equals \$3. If the Materials Provider holds one \$1 bill and two materials tokens, her wealth is also equal to \$3 since she can sell the tokens for \$1 each. Local demand is equal to the wealth of the Labor and Materials providers (\$6) divided by 2, or \$3.

We use a simple mechanism of wealth distribution to motivate Labor and Materials providers: the Processing Center pays a yearly dividend of at least \$1 to both Labor and Materials providers, earnings permitting. The Processing Center may decide to change the dividend or pay out retroactively. This dividend increases the purchasing power of the Labor and Materials providers so they can buy more provisions from the Trading Center. They, in turn, now have more capacity and financial wherewithal to sell labor and materials to the Processing Center. The economy is gaining speed!

Roundup

This round’s evaluation should address three important issues:

1. “My spending is your income and your spending is my income.” If local businesses want to sell more products, they will need a community that can afford to buy more products.



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2. Labor income (employee compensation and proprietor income) is not a loss. This money is recirculated through household spending patterns, causing further economic activity. When these dollars are spent locally, the result is additional sales, employment, and income created as a result of the production and sales of locally purchased goods and services.
3. Wealth concentration limits demand and future growth. If most of the wealth is concentrated in few individuals, total demand in the economy will be less than what the economy is capable of supplying, creating underemployment and limiting new investments and job creation. Inequality limits local demand because higher-income individuals consume a smaller proportion of their income than lower-income individuals.

Round 4: Export

Concepts

This round introduces the concept of exports. Our community has built a railroad to be able to export products to the rest of the world. This resembles many communities in the early 1900s, when newly established railroads facilitated export.

Local demand in our simulated economy remains a function of local wealth. The export market is unlimited, but it can only commence after local market demand is fulfilled. Exports represent a change in our money supply. Local demand is still paid for with local dollars, with value added creating a new (green) dollar. Value added from exports, however, is exchanged for yellow dollars. Yellow dollars are also “new” money, but paid for by the importing community. Yellow dollars therefore represent a wealth transfer from one community to another. If played correctly, the game’s economy grows rapidly in this round, showing how attractive export is.

Roundup

This round’s evaluation should address some of the following important issues:

1. Exports allow an economy to cross the boundaries of local demand and import wealth (“new money”) from other communities into the local economy. Exports allow a business to become “scalable,” as entrepreneurs like to call it, and grow beyond the limitations of a local market.
2. If exports overshadow local demand, a community’s economy becomes heavily dependent on that export. If the export product loses its edge, price becomes the overriding factor. The lumber from the community mill becomes indistinguishable from the lumber from any other mill. In that case, price becomes the overriding factor and ultimately prevents wealth creation.
3. An export economy can easily become an insatiable conversion machine. A growing export demand will draw more and more resources. That may be okay when resources are plentiful or renewable, but it may tempt communities and organizations, especially those with natural resources, to overdraw unsustainably. The export simulation round can be used to make communities aware of this issue, especially if their communities experienced the boom-and-bust cycles that are often associated with natural-resource economies.
4. Trade (exports and imports) among communities can be mutually beneficial. Communities can support each other by trading products that favor their respective local (competitive) advantages, for example, an Alaska fishing village importing oranges from California and exporting salmon and halibut to California.



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5. When a community exports a product, it also exports the labor and materials content of the product. This is similar to what happens when an organization decides to not make a component in-house but to outsource it; it eliminates the in-house labor and materials flow in favor of a complete component. In the standard version of The Dollar Game we simplify the economic impact by accounting only for the value-added component. In reality, export demand will not only have a direct impact on the exporting industry, but also an indirect effect on labor and materials and an induced effect on retail trade, professional services, and infrastructure. In our Alaskan village example, fishers invest in better boats and netting and hire more crew members. That, in turn, stimulates local ship builders who hire more craftsmen and buy more materials. The new crew members and craftsmen buy houses, support the local retail businesses, and visit local doctors. And so on. In this case, export not only pays for the value added, but for the full product value, including labor and materials.

Round 5: Distant Ownership

Concepts

Round 5 illustrates the effect of distant ownership and the changing economy of a community when a value-adding activity is acquired by a distant owner or corporation. Rounds 3 and 4 showed that wealth increase creates a ripple effect through the economy. The game thus far assumed that all ripple effects are captured by the local economy. The reality of our global economy makes this unlikely. When the Processing Center (the creator of the value added) is not locally owned, profits and dividends often leave the region (they are exported) and spent with the owner's location as "epicenter."

In this round, one of the teams assumes the role of distant owner of the Processing Center, while all other teams play regular communities. Assigning distant ownership to the team with the highest score (wealth accumulation) makes sense, if only to mimic the centripetal force of successful economies, growing at the expense of the less-successful economies.

All value added generated through exports is passed to the distant owner. The value added generated by local demand remains with the local teams to simulate the fact that there is usually some positive economic impact of a subsidiary. The distant owner decides the amount of the bonus (minimum \$1) and its timing (beginning or end of the year).

Roundup

Round 5 evaluation should address that business ownership does not necessarily equate to ownership of the added value of the product sold by the business. For example, the added value of gasoline (the long process of refining crude oil into usable gasoline) sold by the local gas station is largely owned by the oil company that produced the gasoline and immediately leaves the local economy. Even though the gas station owner may have revenue of thousands of dollars per day, the value added component of his sale (and thus the wealth contribution to the local economy) amounts to only pennies per gallon. A local artist, on the other hand, may use little material but add considerable value to it with his skills and labor, almost all of it staying in the local economy and contributing to local wealth creation.



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Round 6: Imported Labor

Concepts

This round simulates additional losses of economic activity to other communities. Specifically, it addresses the issue of commuting. Even though companies or employees work in a community, they do not necessarily contribute to local wealth generation when they are not part of the local community. Round 5 showed the effect of distant ownership. This round demonstrates the effect of residents moving out, something that happened when people moved from the city to the suburbs. Over time, this can gradually erode the local economy and create a feedback loop that accelerates the erosion. When the local economy loses its tax base to maintain amenities, the wealthier families may start moving away and make the problem even bigger.

Roundup

Round 6 evaluation should discuss the following issues:

1. Many rural towns and communities have experienced a gradual erosion of their economies for decades. They saw a steady loss of services and small manufacturing, like those of the local blacksmith or butcher, which were “imported” at lower cost and crowded out the local service. With every imported service (a service provided by someone outside the community), the local economy loses the jobs that go with it as well as the related economic impacts of those jobs (direct, indirect, and induced). So what should be done to reverse this, if “buying local” is simply not cost competitive?
2. Individuals that live in the community and work elsewhere are exports from the community (they bring money into the community) if they spend their salaries where they live. The opposite is true as well: individuals that live elsewhere and commute to the community to work are an import if they take their salaries with them.
3. Employee compensation and proprietor income create further economic activity when it is spent. If this money is spent locally, it creates additional sales, employment, and income in the community. However, if this money is taken away by commuters, the additional economic activity will take place where commuters live and not benefit directly the community where they work.



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Play scenarios to grow local economies

Facilitator Instructions

Game preparation

☐: Denotes a suggested slide and facilitator narrative from the companion PowerPoint. Words in *italics* are instructions or tips for the facilitator.

1 (Title slide)

2 Our local economy is very simple. It has a Trading Center, Labor Provider, Materials Provider, Bank, and Processing Center. The Processing Center is the center of wealth creation and can be a farm, factory, sawmill, etc. We will suppose in this case it is a _____ (pick anything familiar to the community). The Bank plays the role of the Federal Reserve. Thus, the bank's role in the game economy is to make sure that the available money in the local economy keeps pace with local wealth. (That is one of the tasks of the Federal Reserve: to increase or decrease money in circulation to reflect changes in wealth in the national economy. It doesn't borrow or lend money to the public.)

3 The Trading Center can sell to the local market or to the rest of the world (export market).

4 The game materials are:

- \$1 dollar bills of three different colors: gray, green, and yellow. Gray dollars are part of the starting capital. Green dollars represent new money printed by the bank in response to increased wealth through local demand. Yellow dollars represent new money printed by the bank in response to increased wealth through exports. We will treat all dollars the same in our economy, regardless of their color.
- Tokens representing labor, materials, or value added. They can be paid for with gray, green, or yellow dollars.

5 There are two rules that will be constant over the game.

1. The first rule is that local demand is a function of local wealth. Local wealth is equal to the wealth of Labor and Materials providers, who represent the middle class in our community. Their wealth is equal to the sum of the dollars and value of the tokens they hold. Local demand for products, then, is defined as the sum of Labor and Materials providers' wealth divided by two.

For example, if the Labor Provider holds three \$1 bills, his wealth equals \$3. If the Materials Provider holds one \$1 bill and two materials tokens, her wealth is also equal to \$3 since she can sell the tokens for \$1 each. Local demand is equal to the wealth of the Labor and Materials providers (\$6) divided by 2, or \$3.

It will be the task of the Bank to estimate yearly local demand, keep track of units sold in the local market, and announce to the other players in his or her team when local demand has been filled.



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Game preparation, *continued*

2. The second rule is that a product is made of one labor token, one materials token, and one value-added token in all rounds but the first. In the first round, a product is made of two labor tokens and one materials token. It doesn't have value added. We will go back to this later when we play round 1.

6

The Labor Provider and Materials Provider buy tokens from the Trading Center for \$1 each. To make a product, the Processing Center buys Labor and Materials tokens from the Labor and Materials providers for \$1 each and adds one value-added token.

**One product therefore equals
one labor token + one materials token + one value-added token.**

To sell the product, the Processing Center trades the product at the Trading Center for \$3. The Trading Center exchanges the value-added token for \$1 bill dollar at the Bank. The bill is green if the product was sold in the local market and, later in the game, yellow if it was exported.



Round 1 | Steady State

Round 1: Introduction

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Let's imagine ourselves on an island far, far away. We are a small community cut off from the rest of the world. No planes, no boats or drones to bring deliveries from the rest of the world. How do we prosper and grow? There are no tax incentives to entice companies from elsewhere to relocate to our island and "bring jobs." No attracting more tourists to save the day for our local retail. It is just us. So how does an economy grow from within? Or don't we need to worry about that? We will explore these questions in the following three rounds.

- *Hand out one game preparation player instruction sheet per team, to force players to work together.*
- *Hand out a game kit to each team.*
- *Walk around to answer questions as the teams prepare for play.*
- *Hand out instructions for round 1 when the teams are ready, and let them know how many years to play (between 1 and 3 years).*

(Note: Keep additional yellow and green dollars on hand in case players grow their economies very quickly and you need to add them to their economies.)

Round 1: Instructions

8

Our island economy is coasting along with stable prices and no changes in exchanged services or goods. Since the economy is isolated from the rest of the world, no money leaves the economy, and no new money enters the community.

- The Materials and Labor providers start out with an established starting capital of three gray \$1 bills.
- The Trading Center holds all the labor and material tokens and does not have dollar bills.
- The Processing Center starts out with a starting capital of three \$1 bills and the value-added tokens.
- The Bank starts with green and yellow dollars. In this round the Processing Center will not use the value added tokens since each product is made of two labor tokens and one materials token.
- Normally, the yearly demand of a product often fluctuates with the wealth of the community. In future rounds, it will be the task of the Bank to estimate the yearly local demand going forward, but in this first round we will assume a steady demand of three products per year. However, the Bank must still keep track and announce to the other players in his or her team when local demand has been filled and fill in the score sheet at the end of the round (last year played). The Bank is also the spokesperson for the team and reports team results in the group sessions. In this round we will play ____ years (we recommend 1 to 3 years).

Round 1: Evaluation

9

Ask each team to report the wealth of each player (Labor and Materials providers, Processing Center, and Trading Center) at the beginning and at the end of the round. Write each team's results on a white board or flipover chart.



Round 1 | Steady State, *continued*

- Ask the players the following questions: *Did the community's wealth increase? Anything that jumped out? If this were your economy, what would you do next?*

10

Concept discussion: "We all scratch each other's backs"

- *Discuss the concept of the flows of money and goods: "My spending is your income; your spending is my income," or "We all scratch each other's backs."*
- *Is this a "good" economy? A stable economy may or may not be a good economy. Environment plays a role (bare rock island or lush subtropical island); people skills and talents play a role.*



Round 2 | Innovation

Round 2: Introduction

11

The Processing Center has launched a new product. It is a better, “smarter,” product than the center’s original, and it is also easier to manufacture—it uses only one labor token instead of the two tokens required in round 1. Since the product has increased in value to the consumer, it still sells for \$3 even though it is now produced more cheaply. An example of this kind of innovation is going from planks to dimensional lumber, which allows community members to build homes in much less time. Another example is the blacksmith building equipment to facilitate farming or logging. Doing more with less translates into increased wealth: you either have more leisure time or time for things other than work. Somehow we need to account for that increase in wealth, and we do so by issuing money when we see value added to the economy. This is what you will see happen in this round.

Round 2: Instructions

Hand out player instructions for round 2, one sheet per team.

12

Discuss rule differences between rounds 1 and 2, and tell players how many years to play.

Note that, when you are spending them, all dollars are treated the same way—whether gray or green, it is all money. The color difference is only a visual for counting at the end!

Tip: If players don’t notice it during play, point out that it is possible to increase productivity by setting up more products at once (contingent to cash-on-hand). This productivity improvement greatly increases economic growth in the next rounds.

Round 2: Evaluation

13

This slide prompts tallying of the group results on the white board/flipover charts.

The community increased its wealth by \$3, with the Processing Center taking all of this wealth. All the value added accumulates with the Processing Center (which would resemble a feudal instead of market environment).



Round 3 | Sharing the Wealth

Round 3: Introduction

14

Recall that the Processing Center was the sole beneficiary of the wealth increase in round 2. The scenario resembles a feudal economy with the processing facility dictating price.

Round 3 will not discuss economic or political solutions for wealth concentration. We will only show that wealth concentration is an important issue for economic growth (whether or not we address it).

Round 3: Instructions

Hand out player instructions for round 3, one sheet per team.

15

Discuss rule differences between rounds 2 and 3, and tell players how many years to play.

- Round 3 uses a simple mechanism of wealth distribution to motivate contractors: a yearly dividend of at least \$1 to both Labor and Materials providers, earnings permitting.
- Since the purchasing power of the community is increasing, the local demand for the Processing Center's product will increase as well [*discuss formula*].

Tip: You might hint that if the Processing Center pays out more than \$1 of annual dividends to the Labor and Material providers, they can buy more materials to start more products at once (allowing for less idle time and increased production).

Tip: Hint that the Processing Center is an entrepreneur and may decide to change the dividend or payout retroactively if that helps the company. This may inspire teams to be even more creative in increasing productivity.

Round 3: Evaluation

Tally the results on the flipover charts or white board and ask for feedback.

16

It becomes clear that distribution of wealth increases the purchasing power of the community at large and creates more local economic activity.



Round 4 | Export

Round 4: Introduction

17

We are now going to transition to a modern economy, where we trade with other communities. In this round, the community builds a railroad. Now it can sell locally as well as export the product to other communities. This resembles many intermountain communities in the early 1900s when newly established railroads allowed local industries to export their products.

Round 4: Instructions

Hand out player instructions for round 4, one sheet per team.

18

Local demand in our simulated economy remains a function of local wealth. The export market is unlimited, but it can only commence after local market demand is filled. It will be the task of the Bank to estimate the yearly local demand and keep track and announce to the other players in his or her team when local demand has been filled and the export market can commence. Value added from export is exchanged for yellow dollars at the bank.

Tip: Note that communities can take advantage of exports only when sufficient wealth creation allows the Processing Center to start up several products at the same time. Unless the Processing Center starts more than one product at a time (that is, asks Labor and Materials providers to bring more tokens to the table), the economy cannot take advantage of the export demand. Some teams will figure this out on their own (the best way of learning), but others may need some help.

Tell players for how long they will play. Start with 5 minutes. The round should last until there is ample evidence that yellow dollars are quickly becoming a substantial part of the economy; this can take 5 to 7 minutes.

Round 4: Evaluation

Tally the results on the flipover charts or white board and ask for feedback.

19

Tip:

- *The only way a region can export is to supply a desirable product competitively: i.e., the region has a unique product or competing products are of lesser quality and/or higher cost. If other communities start to compete, the product may become a commodity if it loses its edge.*
- *An export economy based on natural-resource extraction may become an insatiable conversion machine; if demand is limitless, the tendency is to draw more and more.*



Round 5 | Distant Ownership

Round 5: Introduction

20

The last two rounds showed that a wealth increase creates a ripple effect through the local economy, with increased demand causing increased production, which in turn increased the demand for the Labor and Materials providers. In a real economy there are secondary ripples as well, such as when the owner of a business uses his or her wealth to renovate the kitchen or celebrate success with lavish dinners.

The game thus far assumed that all ripple effects are captured by the *local* economy. But when the Processing Center (the creator of value added) is not locally owned, profits and dividends may leave the region (be exported) and spent with the owner's location as "epicenter."

21

Let's look at ownership of a *business* versus ownership of the *value added*. Gasoline may cost \$3–\$4 per gallon at the pump, but the value added provided by (and profit for) the owner of the gas station is just pennies per gallon. The value added in the making of gasoline is largely with the oil company and oil source. Money spent on items where the value added is largely owned elsewhere, like gasoline, therefore leaves very little impact on the local economy. Now think of a craftsman or an artist: most of the value added is generated by the skills of the individual, and most of the profit stays in the region.

Round 5: Instructions

Hand out player instructions for round 5, one sheet per team.

22

Discuss rule differences, and tell players how many minutes to play, generally 3 to 5 minutes.

Assign one team to be the distant owner, or parent company. Assigning distant ownership to the team with the highest score (wealth accumulation) makes sense, if only to mimic how strong economies tend to cannibalize weaker economies.

All value added generated through exports (and thus the yellow dollars associated with that export) are now passed to the distant owner. The value added generated by local demand still remains in the local teams to simulate the fact that there is usually some positive economic impact of a subsidiary. The distant owner decides the amount (minimum \$1) and the timing of the bonus (beginning or end of the year).

Round 5: Evaluation

Tally the results on the flipover charts or white board and ask for feedback.

23

The discussion should touch on the following points:

- *Total wealth generation is the same, but much of it does not get reinvested or recirculated into the local economy but instead flows out of the community.*
- *The extraction of local assets (timber, or whatever it is) remains the same whether or not ownership is local. Much of the inherent wealth associated with the local assets now leaves the community, however.*



Round 6 | Imported Labor

Round 6: Introduction

(24)

The Labor Provider has moved to the larger town that is home to the Processing Center's parent company to take advantage of its more extensive amenities. As a result, labor for the Processing Center in the smaller community now commutes from the larger town.

Round 6: Instructions

Hand out player instructions for round 6, one sheet per team.

(25)

Discuss rule differences.

- The Labor Provider buys labor tokens from the Trading Center of the community where he works.
- The Labor Provider's wealth no longer counts toward that of our smaller, local community, however, but is counted instead in the parent company's community. This, in turn, diminishes local demand for the local community's Processing Center but increases demand for the Processing Center in the parent company's community.

Round 6: Evaluation

Tally the results on the flipover charts or white board and ask for feedback.

(26)

- The take-home message is that, even though companies or employees work in a community, they stop contributing to local wealth generation when they are not part of the local community. This, over time, will gradually erode the local economy, and can create a feedback loop that accelerates the erosion. When the local economy loses its tax base to maintain amenities, the wealthier families may start moving away and make the problem even bigger.
- The inverse is true as well: if a community starts attracting activities that it previously imported (called "import substitution" in economics) or attracting residents that start new activities, it will accelerate the influx of wealth.



The Dollar Game

Play scenarios to grow local economies

Player Instructions

Hand out one instruction sheet per team at game preparation and at the start of each round.

Game preparation

Round 1 | Steady State

Round 2 | Innovation

Round 3 | Sharing the Wealth

Round 4 | Export

Round 5 | Distant Ownership

Round 6 | Imported Labor



Game Preparation

1. Each team gets a game kit containing:

- Money: 9 gray dollar bills, 23 green dollar bills, 64 yellow dollar bills
- Tokens: 10 labor tokens, 10 materials tokens, 16 value-added tokens
- Role cards: One each for Processing Center, Materials Provider, Labor Provider, Trading Center, and Bank
- Team score sheet

2. Assign the following roles to the members of your team and give them their role cards:

- Processing Center
- Materials Provider
- Labor Provider
- Trading Center
- Bank. The Bank is also the spokesperson for the team and reports team results in the group sessions.

Note: If you have only four people on the team, assign one person to be both Bank and Trading Center. If you have six people, separate the roles of Bank and spokesperson or make two people play together in one role.

3. Give the money to the Bank, which then distributes \$3 (gray bills) each to the Processing Center, Materials Provider, and Labor Provider.

4. Distribute the tokens:

- Value-added tokens are held at the Processing Center.
- Labor and materials tokens start out at the Trading Center.

Ask the facilitator for the instructions for the first round and you are ready to start the game!



Round 1 | Steady State

Community members work at the local Processing Center (farm, mill, or factory) and produce products that require two inputs: labor tokens (supplied by the Labor Provider) and materials tokens (supplied by the Materials Provider).

The yearly demand of a product often fluctuates with the wealth of the community. In future rounds, it will be the task of the Bank to estimate the yearly (local) demand going forward, but in this first round we will assume a steady demand of three products per year.

Your facilitator will tell you how many years to play. When the facilitator tells you to start, execute the following steps:

1. The **Labor Provider** buys labor tokens from the **Trading Center** for \$1 each; this allows him/her to provide labor input to the Processing Center.
2. The **Materials Provider** buys materials tokens from the **Trading Center** for \$1 each; this allows him/her to provide materials input to the Processing Center.
3. To make a product, the **Processing Center** buys labor and materials tokens from the **Labor and Materials providers** for \$1 each. Producing one product requires two labor tokens and one materials token:

1 product = 2 labor tokens + 1 materials token

4. To sell the product (represented by two labor tokens and one materials token), the **Processing Center** trades the product at the **Trading Center** for \$3.
5. Go back to step 1 and repeat the steps until you have filled local demand for the number of years you are playing. The **Bank** must keep track and announce to the other players in his or her team when local demand has been filled.
6. At the end of this round, the **Bank** records the wealth of the community on the team's score sheet.



Round 2 | Innovation

The Processing Center produces a second-generation product. Not only does the new product perform better than the first, it is easier to produce. Instead of two labor inputs per product, the Processing Center now only needs one.

The yearly local demand of the product is again three products.

Your facilitator will tell you how many years to play. When the facilitator tells you to start, execute the following steps:

1. The **Labor Provider** and **Materials Provider** buy tokens from the **Trading Center** for \$1 each.
2. To make a product, the **Processing Center** buys labor and materials tokens from the **Labor and Material providers** for \$1 each (any color). Remember: the new product is now easier to make, but it represents more value. In this round, one product equals one labor token, one materials token, and one value-added token:

1 product = 1 labor token + 1 materials token + 1 value-added token

3. To sell the product, the **Processing Center** trades the product at the **Trading Center** for \$3 (any color).
4. The **Trading Center** exchanges the value-added token for \$1 (green bill) at the **Bank**.
5. Go back to step 1 and repeat the steps until you have filled local demand for the number of years you are playing. The **Bank** must keep track and announce to the team when local demand has been filled.
6. The **Bank** records the wealth of the community on the score sheet then returns the value-added tokens to the **Processing Center**. (Note: if the Processing Center runs out of value-added tokens before the end of the round, the Bank can return tokens earlier, as needed.)



Round 3 | Sharing the Wealth

The Processing Center shares its new-found wealth and pays out yearly dividends to both the Labor and Materials providers in the team.

Since local demand is a function of local wealth, local demand changes in this round. The Bank will estimate the annual local demand with the following formula:

$$\text{Local demand} = \frac{\text{Wealth of Labor Provider} + \text{Wealth of Materials Provider}}{2}$$

NOTE that wealth is counted in dollars and tokens. At the start, the labor and materials providers each has \$3, so the local demand for the first year is three products.

Your facilitator will tell you how many years to play.

1. At the beginning or end of each year, the **Processing Center** pays a bonus to both **Labor and Materials providers** (\$1 minimum; the amount is at the discretion of the Processing Center).
2. The **Bank** will estimate the local demand for the year.
3. The **Labor Provider** and **Materials Provider** buy tokens from the **Trading Center** for \$1 each.
4. The **Processing Center** buys tokens from the **Labor and Materials providers**, making products the same way as in the previous round:

$$1 \text{ product} = 1 \text{ labor token} + 1 \text{ materials token} + 1 \text{ value-added token}$$

5. The **Processing Center** trades the product at the **Trading Center** for \$3.
6. The **Trading Center** exchanges the value added token for \$1 (green bill) at the **Bank**.
7. Go back to step 3 and repeat the steps until you have filled local demand for the year. The **Bank** must keep track and announce to the team when annual local demand has been filled.
8. The **Bank** records the wealth of the community on the score sheet, then returns the value added tokens to the **Processing Center**. (Note: if the Processing Center runs out of value-added tokens before the end of the round, the Bank can return tokens earlier, as needed.)



Round 4 | Export

The railroad has come to town! Now you can sell your product locally and export it to nearby communities.

From now on, the facilitator says how many minutes to play or how many minutes a year will last. The facilitator might decide to play more than 1 year.

1. At the beginning or end of each year, the **Processing Center** pays a bonus to both **Labor and Materials providers** (\$1 minimum; the amount is at the discretion of the Processing Center).
2. The **Bank** estimates the new annual local demand:

$$\text{Local demand} = \frac{\text{Wealth of Labor Provider} + \text{Wealth of Materials Provider}}{2}$$

3. The **Labor Provider** and **Materials Provider** buy tokens from the **Trading Center** for \$1 each.
4. The **Processing Center** buys tokens from the **Labor and Materials providers**, making products the same way as in the previous round:

$$1 \text{ product} = 1 \text{ labor token} + 1 \text{ materials token} + 1 \text{ value-added token}$$

5. The **Processing Center** trades the product at the **Trading Center** for \$3.
6. The **Trading Center** exchanges the value-added token at the **Bank** for \$1 (green bill) when the product is sold locally, but for \$1 (yellow bill) if the product is exported. NOTE: local demand is filled first; the **Bank** will need to keep track of when local demand has been filled.
7. Go back to step 3 until the facilitator calls the end of the year. A new year restarts at step 1.
8. The **Bank** records the wealth of the community on the score sheet, then returns the value-added tokens to the **Processing Center**. (Note: if the Processing Center runs out of value-added tokens before the end of the round, the Bank can return tokens earlier, as needed.)



Round 5 | Distant Ownership

The local Processing Center is now part of a national chain. All local facilities now pay their export dollars as a yearly dividend to the parent company.

The facilitator will announce which team hosts the parent company.

1. At the beginning or end of each year, the Processing Center pays a bonus to both Labor and Materials providers (\$1 minimum; the amount and timing of the bonus are at the discretion of the parent company).

2. The Bank estimates the new annual local demand:

$$\text{Local demand} = \frac{\text{Wealth of Labor Provider} + \text{Wealth of Materials Provider}}{2}$$

3. The Labor Provider and Materials Provider buy tokens from the Trading Center for \$1 each.

4. The Processing Center buys tokens from the Labor and Materials providers, making products the same way as in the previous round:

$$1 \text{ product} = 1 \text{ labor token} + 1 \text{ materials token} + 1 \text{ value-added token}$$

5. The Processing Center trades the product at the Trading Center for \$3.

6. The Trading Center exchanges the value-added token at the Bank for \$1 (green bill) when the product is sold locally, but for \$1 (yellow bill) if the product is exported. Local demand is filled first; the Bank will need to keep track.

7. Go back to step 3 until the facilitator calls the end of the year, at which point the Processing Center transfers all yellow dollars to the parent company.

8. The Bank records the wealth of the community on the score sheet, then returns the value-added tokens to the Processing Center. (Note: if the Processing Center runs out of value-added tokens before the end of the round, the Bank can return tokens earlier, as needed.)



Round 6 | Imported Labor

The Labor Provider has moved to the home of the Processing Center's parent company to take advantage of the town's more extensive amenities. As a result, labor for the Processing Center in the smaller community now commutes. The Labor Provider buys labor tokens from the Trading Center where it works, but its wealth counts toward the community where it lives.

1. At the beginning or end of each year, the Processing Center pays a bonus to both Labor and Materials providers (\$1 minimum; the amount and timing of the bonus are at the discretion of the parent company).

2. The Bank estimates the new annual local demand based on the wealths of the Materials and Labor Providers that live in the community.

$$\text{Local demand} = \frac{\text{Wealth of Labor Provider} + \text{Wealth of Materials Provider}}{2}$$

3. The Labor Provider and Materials Provider buy tokens from the Trading Center for \$1 each.

4. The Processing Center buys tokens from the Labor and Material providers, making products as in round 5:

$$1 \text{ product} = 1 \text{ labor token} + 1 \text{ materials token} + 1 \text{ value-added token}$$

5. The Processing Center trades the product at the Trading Center for \$3.

6. The Trading Center exchanges the value-added token at the Bank for \$1 (green bill) when the product is sold locally, and for \$1 (yellow bill) if the product is exported. Local demand is filled first; the Bank will need to keep track.

7. Go back to step 3 until the facilitator calls the end of the year, at which point the Processing Center transfers all yellow dollars to the parent company.

8. The Bank records the wealth of the community on the score sheet, then returns the value-added tokens to the Processing Center. (Note: if the Processing Center runs out of value-added tokens before the end of the round, the Bank can return tokens earlier, as needed.)



The Dollar Game

Round

Team Score Sheet

Where did the money go?

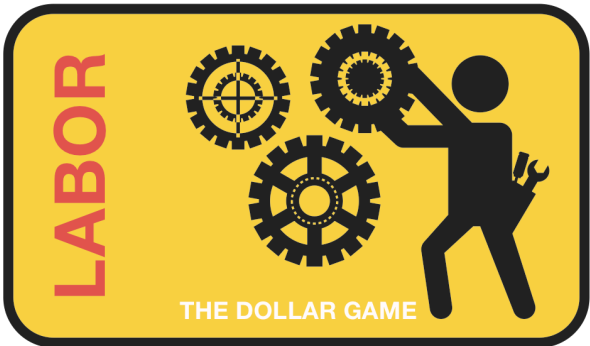
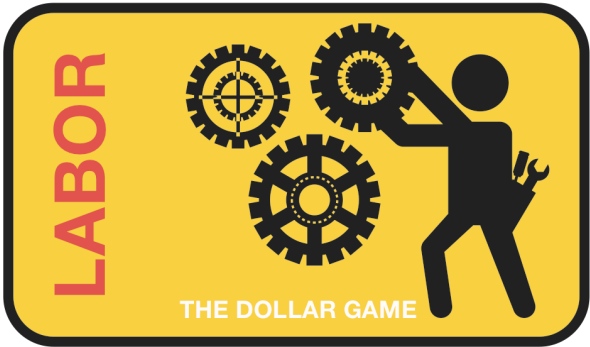
Materials
Provider

Labor
Provider

Processing
Center

Trading
Center

Total
Community
Wealth



MATERIALS



THE DOLLAR GAME

MATERIALS



THE DOLLAR GAME

MATERIALS



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MATERIALS



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THE DOLLAR GAME

MATERIALS



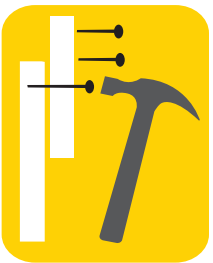
THE DOLLAR GAME

MATERIALS



THE DOLLAR GAME





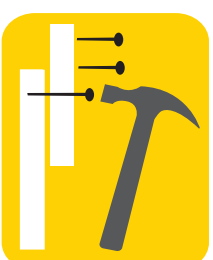
Labor Provider

You can purchase labor tokens (representing skills and labor that you can trade) at the Trading Center for \$1 per token.



You can exchange each token with the Processing Center (i.e., sawmill, farm) for \$1.

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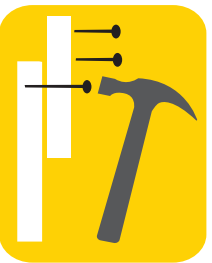
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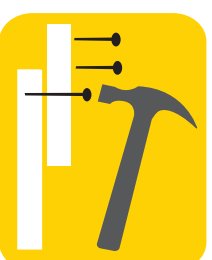
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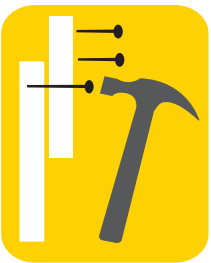
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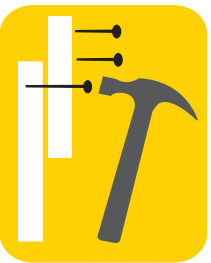
Materials Provider

You can purchase materials tokens (representing materials you can trade) at the Trading Center for \$1 per token.



You can exchange each token with the Processing Center (i.e., sawmill, farm) for \$1.

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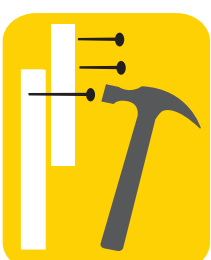
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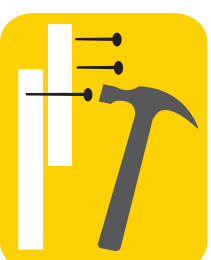
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You can exchange each token with the Processing Center (i.e., sawmill, farm) for \$1.

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Processing Center

Think of yourself as a sawmill, factory, or farm. You make different products as specified at the start of each round.

A product always contains *labor* and *materials*. After round 1, you make the product more valuable by adding features (*value added*).

You purchase labor and materials tokens on the open market from individual providers unless otherwise instructed.

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Processing Center

Think of yourself as a sawmill, factory, or farm. You make different products as specified at the start of each round.

A product always contains *labor* and *materials*. After round 1, you make the product more valuable by adding features (*value added*).

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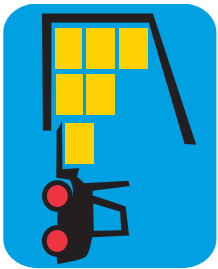
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A product always contains *labor* and *materials*. After round 1, you make the product more valuable by adding features (*value added*).

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Trading Center

All productivity flows through the community Trading Center.

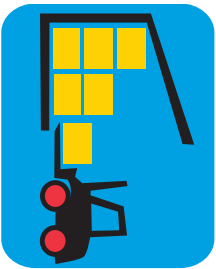
Labor and materials:

In order for the Labor and Materials providers to be able to work and trade they will need to purchase necessary provisions from you.

Production:

The Processing Center will use you as a distribution center and sell its production to you.

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Trading Center

All productivity flows through the community Trading Center.

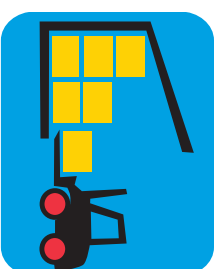
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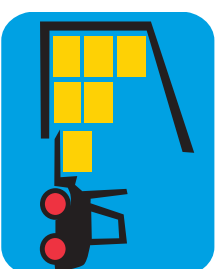
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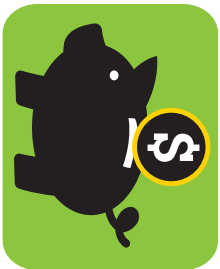
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In order for the Labor and Materials providers to be able to work and trade they will need to purchase necessary provisions from you.

Production:

The Processing Center will use you as a distribution center and sell its production to you.

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Bank

The Bank reports on the community's financial situation.

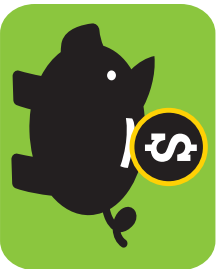
The Bank calculates annual local demand and keeps track of when demand has been met, figures community wealth and enters it on the score sheet, and serves as spokesperson for the team in group sessions.

In addition, the Bank converts value added into money:

Local demand: one value-added token equals green \$1 bill



Export demand: one value-added token equals yellow \$1 bill



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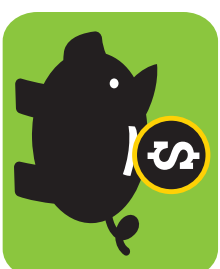
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