

*A best guess – minus the politicizing that goes into minimizing all rents.*

## CHAPTER 20

# TRUE TOTAL TRILLIONS YANKS SPEND ON LAND

*If you torture data enough, it will confess.*

### HE ASKED FOR IT

**B**ill Larson, an employee of the US Bureau of Economic Analysis, offered the world a total for the worth of Earth in America. Now that others can see his figure for the value of land and resources, that rent becomes real – and useful. A serviceable estimate for how much we spend on the nature we use fills in a huge gap in our numerical knowledge of economies. The statistic reveals the size of the surplus that society generates, plus, when paired with income, what phase of the business cycle we're in.

Bill sought the entire value of natural assets, urban and rural. He did his research and calculations on his own. For whatever reason, his and all the other US agencies do not provide such a number.

Bill's tally came to \$23 trillion for all land. However, that's \$7 trillion shy of Albouy's total for metro land alone, excluding natural resources (Ch 13). What explains the wide disparity?

When including land owned by state and local governments, did Bill include roadways? Most overlook streets, but not all. TeleCommUnity in 2002 figured the annual value of the nation's rights-of-way by themselves to range between \$305 billion and \$366 billion, and the price of the land beneath streets – most streets are in high-value cities – to be \$7.1 trillion<sup>1</sup> – the difference between his \$23 t and Albouy's \$30t.

Toss farmland and everything from the subsurface like oil to the supra-surface like airwaves onto Albouy's \$30 trill, and Bill's figure looks \$17t short (Ch 15); for us, a trillion is still real money.

What explains the wide disparity? Also, earlier scholarly tabulations used figures almost a decade old; how much would an up-to-date total be? Finally, researchers so far have used lump sum prices while ongoing rents are more useful; how much is the latter?

<sup>1</sup> "Roadway Land Value" Page 5.7-18 in Transportation Cost and Benefit Analysis II by Todd Litman at Victoria Transport Policy Institute, 21 March 2019

Larson called his figure a draft estimate, said his study attempted to provide baseline methods upon which further researchers can draw. He asked fellow economists and statisticians for refinement, yet his brethren ignored him. We won't. If public agencies won't do the work, we'll have to figure it out ourselves. It'd be great to have an army of eager grad students pitch in. Professors have that luxury, so why don't they ... never mind. If you want something done right ...

What we lack in experience, we'll make up for in unbiased adherence to impartial logic. A real scientist goes out on a limb and says the world is round, space is flexible, time relative, and things too small for you to see make you get sick and die, no matter the fuss it may kick up. Political prudence and compromise is nowhere near doing real science. Unlike those whose careers are on the line, we can follow reason wherever it may lead. So we won't low- or high-ball. We'll merely tally as precisely as possible. And live with the results.

To total up all the rents, one needs the figures for all:

- Land: downtowns, home sites, farms, fields, forests, underground ores, oil deposits, etc,
- Water rights and waterways,
- Airwaves for all telecommunications, and
- And if you're not to leave anything out, incidental locations like marina berths, airport landing-lots, etc,
- The above, whether owned privately or publicly, and
- payments of principle, interest, insurance, taxes, etc on these assets. That should cover it.

## HE'S GETTING WARM

**T**he one who generated a total for all land, Larson, admitted his was a best guess, one with gaps that needed filling. When including land owned by state and local governments, did he include roadways? By focusing only on the surface, could he encompass oil, ores, and airwaves? Did Larson incorporate the "F" and "I" of F.I.R.E. (payments for loans and insurance)? The answers, as far as I could tell, are "no."

The biggest total – \$30 trillion by Albouy – was also incomplete, for metro land alone. Yet it clobbered all other academic estimates for *total* property – natural land plus man-made buildings. The greatest amount for land any one of them could find was \$12 trillion (Ch 13). How can the discrepancy be so great?

- First, most researchers examined only its most common use, residential land, leaving out its most pricey use, commercial land.
- Second, when officials subtracted a value for buildings, they subtracted a replacement cost. Doing that ignores depreciation of the building, exaggerates its value, and shrivels the value of the location. Larson used those shriveled estimates for residential land.
- Third, he also used official figures for land in other uses, when he could find them. Those figures were woefully incomplete and similarly minimized (Ch 18). For some reason, official figures, even Larson's, are gross underestimates for some reason.
- Fourth and fifth, Larson unavoidably left out lots of things and used figures for 2009, close to the bottom of land prices in the recent recession. Albouy, too, left out lots – all rural land – and also based his total on prices from 2009. What Albouy did differently was avoid aggregate assessments of land plus buildings (Ch 13).

Instead, Albouy's team used individual sales. Not sales of property but only sales of land. From those prices, they extrapolated a total for all land. Just as "replacement cost" and other tricks make official small figures unrealistic, actual land sales make Albouy's big figure reliably realistic, despite being so much greater.

### FILLING IN THE BLANKS

**C**aveats: I'm able to use only the publicly available stats. Maybe the stats one pays a business for are better. Maybe somewhere are good stats for free. So it goes. ... We'll play with the cards we're dealt.

Since Albouy published (Ch 13), housing has recovered all its lost value and more. Because most of the change in housing value is not in the building but in its location component, we can use that percentage<sup>2</sup> increase for land.

According to Zillow, since 2009, the increase to 2018 has been 12%. So Albouy's \$30 trillion is likely in 2018 to be \$33.6 tr. Coincidentally, the increase in federal land since 2015 – the year of Ebeling's \$5.5 tr (Ch 15) – has likewise been 12%. That raises federal holdings to \$6.6 tr – more than the \$6.5 tr tax dollars gone missing. Add up these two updates of Albouy and Ebeling, plus the \$3 tr for farmland – the USDA figure was up-to-date – plus the fraction for water. Now we're at \$43.5 trillion.

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2 "Why Have Housing Prices Gone Up?" by Edward L. Glaeser, Joseph Gyourko, & Raven E. Saks; 2005

Forty-three and a half trillion for all land and natural resources. After spending so much time down the rabbit hole of officialdom, I feel like I'm performing alchemy, cobbling together such a biggie when they arrive at such littles. Besting the best official guesstimate by so much does give one pause.

Now that we've brought price up to date, let's bring it down to earth and convert price to rent, before we seek values for all parts of the natural world we use.

## FROM PRICE TO RENT

Conventional economists mix apples and oranges. They compare the price of land, a lump sum, to GDP, a flow. If comparing to GDP, they should cite rent, another flow. If citing price, they should compare to other fixed assets, like buildings. Apples to apples, oranges to oranges.

Steve Cord, using National Income (Ch 13), and Riley Ashton, using leases (Ch 11), calculated the annual rental value of all land. They had good reason to. Rent is fundamental, price is derived. To charge rent, owners don't have to know price. Yet to set a price, first someone must know the rent.

To evaluate sites, one measures annual output. Not just farmland, which we judge by harvests, but commercial sites, too; we assess how much merchants make there yearly. Even homesites have benefits that are seasonal—a view of nature, proximity to a school or a park, etc.

Then one estimates a decade-or-more's worth of rent to set a price. Being a guess, price has a builtin chance of being inaccurate. Being an actual payment (usually), rent has builtin accuracy.

While an ongoing rental value is a fact, a lump sum payment for all land is a fiction. If all land were for sale, it could never sell for the aggregate sale price. Supply would drown demand. Auctioneers could never fetch anywhere near those aggrandized aggregates. With so much to choose from, buyers could be picky and patient. They could negotiate down to an amount well below lump price, closer to annual value.

If society leased out all locations at once – a la Hong Kong, Canberra, US port districts, et al – yes, society could recover land's rental value every month. Tenants could afford periodic payments. Leasing being feasible, rent totals tell a truer story. Rent, not price, is what measures the value of land.

Ironically, to derive an aggregate rent, the process goes: Owners push rent to the limit, from that sellers set prices, from that specialists take a ratio of price to rent, divide price by it, and estimate a new number for rent—which everybody hopes equals the original amount. Fred Foldvary and Tim Worstall (Ch 13) sought their grand totals that way

Some say the ratio of price to rent is the rate one usually paid to borrow not land but money: 5% or 20:1. Yet throughout history, the relentless competition between unequal economic agents fluctuated, and with it the lending rate. Twice that common figure – 10% or 10:1 – is realistic, too. Look:

- HUD's average selling price of apartment complexes (multi-family housing) was \$1 million. Their annual average of rental receipts was \$100k, one tenth. That ratio is about 10:1.
- The OMB's estimate of federal receipts from federal land was about \$0.5 trillion. Ebeling's estimated price for federal natural assets was \$5.5t. Again the ratio is about 10:1.
- The accumulated price for land from Zillow, Lincoln, and the BEA were about \$27t-\$28t. At that time, Quora figured we spend at least \$2.72t on land (at least because Quora said the data they found had gaps). Once more, the 10 to 1 ratio holds.

Applying the 10:1 ratio to our own estimate of the aggregate price of land puts land rent at \$4.4 trillion. Yet we're not finished. People don't just pay a price or rent to own or control some land or resource. They also pay interest, insurance, taxes, etc for land. *Census says the property tax was over \$13 billion in 2012. Since then property has increased 43%, says Zillow, so property tax payments must by now exceed a half billion. So rounding up to \$4.4 trillion is easily a safe bet.*

*If you can't count on their counts, then extrapolate the way a geonomist does.*

If you think \$4.4t is a lot, check out what our friends with credentials have estimated for the total of all rents:

- Dr Nic Tideman, a former Presidential Advisor on inflation, calculated a ballpark lump sum price of all land at \$31 trillion (private email). He put land rent at roughly 10% of GDP or NDP. That's about \$2t, a far cry from his \$31t, and neither 5% nor 10% of his aggregate price. Go figure.
- However, Dr Steven Cord found rent to account for a quarter of national income and our \$4.4t is about a quarter of current national income.
- Dr Mason Gaffney of UC Riverside put the figure for society's spending on land and resources at \$5.3 trillion.
- Dr Fred Foldvary at San Jose State, adhering to Dr Terry Dwyer's work (formerly at Harvard), came in higher at \$6 trillion.

How can two of these totals be trillions more than mine? Mine left out portions of rural land value; in the countryside, there is more land than just farmland. And there is more “land” underground – oil and ores. Mason may have found sources more complete and included what I could not find. Meanwhile, Fred used a third of national income since land is one of the three basic factors.

A total for rent of five or six trillion, with a ratio of 10:1, puts the aggregate price of land at \$53 or \$60 trillion. That makes our aggregate price for land – \$44t – seem not so huge after all. Whether \$44t or \$60t, all are easily feasible if John Rutledge’s \$300 trillion for assets (Ch 18) is reliable; land would clock in at \$180t, minimum.

Which estimate is the best guess? Given that:

- land is one of the three basic factors, its rent should be a lot,
- national income, at about \$18t, may mean rent is one third the total flow,
- Fred’s source, Terry Dwyer, an Australian, specializes in such calculation and used Aussie figures which are far more accurate than US figures,
- real estate typically dwarfs stocks and bonds,<sup>3</sup> and
- Rutledge’s \$300t suggests land alone should be immense, therefore.... These are persuasive reasons to go with *not* my \$4.4t but Fred’s \$6 trillion.

## GETTING PERSONAL

All these estimates by geonomists need to be authenticated, but by whom? Critiques can’t rest on solid data, because they don’t exist. While we welcome critiques, a critic must employ reason and address methodology. That takes experience in dealing with rents, something most economists lack.

How much is \$6 trillion? Per capita, your share as a registered voter in America – it’s about \$3000 ... every month. Or, about \$36k per year ... until land value rises again, pulling the per capita amount up with it. If something seems too good to be true ... can this be a mirage?

To please those who prefer lower totals, let’s go with my \$4.4 trillion, a decent ballpark figure, which is \$2k/month or \$24k annually. May this finding nudge statisticians and academics to refine our work – with great ease, since my text isn’t in jargon. Then we’ll compare my new standard to the estimates of mainstream economists and bureaucrats who’ll come later. Kicking off a discussion on rents would be progress, too.

<sup>3</sup> “Savills World Research: How Much Is The World Worth?” At McGuire Real Estate, on 24 April 2017 115