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Introduction to Research

15 May 2025

The Increase of LEGO Costs Over the Last Decade

Lego costs have been increasing for quite some time. Though they became big in 2015 (Hunter), Lego wasn't always the huge plastic brick business you know today. Lego started out as wooden toy business in Billund by a Danish carpenter named Ole Kirk Christiansen who had a shop in 1916 where he made wooden toys for children (Herman). His son, Godtfred Kirk Christiansen, followed in his father's footsteps with him creating and patented the Lego brick design in 1958, being able to interlock with other bricks like it to create different structures (Herman). Lego has been increasing the number of pieces in their sets since then, yet the prices are sometimes more expensive than what it should be for the price per part (PPP): one Lego piece ranges from 2 cents to 1 dollar depending on the type of piece (Bartneck and Moltchanova; "Price Per Part"). Licensing is sometimes the cause, but Lego has original themes that are just as expensive. Lego is a big business and has a lot of money, but manufacturing Lego sets is not cheap. Some reasons why Lego sets are priced the way they are is because of their complexity, printing costs, and new molds.

COMPLEXITY

Lego has been improving their models throughout the years, making their Lego sets bigger, more accurate, and interesting. One idea Lego decided to do was Lego Technic (“About LEGO Technic”). They designed Lego bricks with holes on them to fit a special Lego piece called the axel to slide in. They also designed other parts for the new system called pins that would interlock with Lego technic pieces. There are friction pins, pins with an axel on it, and a pin that combines the two (Alphin). Lego used this whole idea and made an entire line out of it to make very realistic models of vehicles like cars, planes, boats, and helicopters (“About LEGO Technic”). Lego expands their tools to create different Lego systems, however with this in mind, that buffs up the price to Legos because they use a variety of high-quality plastics. Before even making a new Lego system/set, they must design it to make sure the pieces properly fit with one another and find which plastic material would work best with the model. This makes the process very time consuming and tedious but with specially trained designers and advanced tools, the process becomes a little easier.

Ever since Lego started making different Lego systems and improving sets, they have a significant increase in public interest (CapnRex101). Lego once made very basic sets, and the Lego minifigure wasn’t even made until the year 1978 (Sorrentino). Before, some Lego sets had brick-built versions that didn’t have the same functionalities that they now have today. In the 2000s to now, Lego created different sets that were more detailed and bigger than some sets. they marketed these kinds of sets to an older audience to try to get more buyers, These sets were very expensive and were sometimes made for specific IP/theme to really connect with the audience that they were marketing to try and get them

to buy stuff that were based off of things they might've loved as a kid, this eventually turned into a whole theme called the Adults Welcome line ("Adults Welcome"). They made very accurate models of pop culture media; with this, their sets had to be very accurate. With this specific requirement, they started making more specialized pieces for these sets and eventually more pieces were carried over to the other themes and they started to make accurate Lego models across different themes.

MANUFACTURING

If you buy a Lego set, you may notice some pieces have little details on them. These details are the result of printing on Lego bricks. Lego factories use Industrial-scale Pad Printing Machines to put these little details on ("LEGO Figure"). Think of it like printing on paper but using different plastics instead of paper. The more detailed the print is, the more expensive it will be. With this problem, Lego resorted to using stickers for extra details on their sets. Printing on stickers is still a little expensive, but it is a more cost-effective solution compared to printing on plastic (Poshhammer).

Lego sets are also expensive because of the cost of producing the bricks. Lego uses several different high quality plastics including ABS, HIPS, PA, arMABS, MTPO, PC, Bio-PE, POM, PP, TPU, SEBS, and TP ("Materials in LEGO Bricks"). LEGO bricks are carefully molded, with the plastic materials being first transported, stored in tubes, mixed with dye, melted, and molded by being pushed into a former ("How LEGO Uses Precision Molding"). The pressure being put on from the molding process needs to be controlled due to the process reaching around 29,000 psi. Lego also makes sure that each brick is sturdy.

To determine how much pressure a 2 × 2 Lego brick can withstand before breaking or changing shape, engineers from the Open University placed it in a hydraulic press. The Lego brick was found by Dr. Ian Johnston to be capable of withstanding 4,240 Newtons, or 953.1899 pounds of force, or 375,000 Lego bricks. Thus, in theory, a Lego structure 2.17 miles high should not damage the bottom Lego brick (Groenewald). Since Lego needs to meet the same requirements that they do for every brick they produce, more complex bricks being molded can raise up the price.

NEW MOLDS

Lego has many themes to make Lego sets for and that means they need to create more molds. Lego has a history of taking preexisting Lego models and creating updated versions, like the Millennium Falcon (“Never Tell Me the Odds”). They either make the updated models bigger, more accurate, or less blocky. Lego creates specialized pieces to make this happen, fitting them for specific functions. Bionicle (an early 2000s Lego theme) was revived in 2015 and built with entire new Lego molds and some updated molds for the new theme. The Bionicle reboot theme later retired and made way for more themes to be revived. Lego minifigures are always getting new parts like accessories, hair pieces, leg pieces, and torso pieces (“LEGO Minifigure Parts”). Lego has been increasing the number of different molds whether for a new/updated theme, minifigure, or new/updated model.

CONCLUSION

Lego costs have increased in size over the years and some people think this is a bad thing. It is not all bad, Lego sets have gotten significantly better due to major advancements in their models. Stronger plastics have been made, new molds are created, and prints have become more detailed, allowing for the coolest creations to exist. Lego has evolved a lot since the 1950s and the future looks bright, even if costs may increase. Lego released the Titanic as a Lego set and is one of the biggest Lego sets now and is $679.99 (“LEGO Titanic”). This proves that Lego is more than a toy company. It is inevitable that costs will increase more as we go into the future, yet we can hope that the quality they produce will get better and better through that time.

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