

## Do-It-Yourself Home Repair and Remodeling in GDP

Topic:

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Most household production is excluded from GDP. However, the System of National Accounts 2008 (SNA 2008) recommends that countries include unpaid home repair and home remodeling projects if those activities are normally done by landlords. For example, changing a light bulb is typically done by tenants and therefore excluded from GDP. But replacing a faucet is typically done by landlords and should be included in GDP regardless of whether it is done by a landlord or a homeowner. Despite the SNA's recommendation, BEA currently excludes do-it-yourself projects from GDP. In this paper, I calculate US GDP when do-it-yourself projects are included.

I use the American Housing Survey to track do-it-yourself projects from 1997 to 2009. On average, home-owners did 42% of home repair and remodeling themselves. These projects cost 60% less than similar projects with hired workers. Accordingly, I calculate that homeowners saved 25% on home repair and remodeling by doing the work themselves. This ratio falls slightly in good economic times and rises slightly when unemployment is high. On the other hand, the total number of home repair and remodeling projects rose dramatically during the housing bubble and fell dramatically after it popped. Accordingly, the dollars saved from do-it-yourself projects tracks the housing bubble.

Finally, I calculated GDP from 1997 to 2009 when do-it-yourself projects are included. In 1997, GDP rises by \$18 billion, or 0.21%. In 2005, GDP rises by \$43 billion, or 0.34%. In 2009, GDP rises by \$11 billion, or 0.08%. The sudden disappearance of do-it-yourself projects reduces average growth from 2005 to 2009 by 0.07% (nominal). Therefore, the current recession would be a little more severe if do-it-yourself projects were included in GDP.

New version (submitted by mail)

The effect on GDP from the housing bubble and bust becomes more dramatic when do-it-yourself work is included. Based on the American Housing Survey, I calculate that measured investment in home improvement increases by 33% when do-it-yourself work is included. This 33% increase is roughly constant from 1997 to 2009. On the other hand, the total number of home improvement projects rose dramatically during the housing bubble and fell slightly after it popped. The run-up in housing prices also becomes more dramatic when do-it-yourself projects are treated as investment. I use BEA's pre-existing data on out-of-pocket home investment and my own estimates of do-it-yourself home investment to create two synthetic Case-Shiller indexes: one with only out-of-pocket investment and one with do-it-yourself projects included. With only out-of-pocket projects, actual housing prices peaked at 48% above what the fundamentals justified. Including do-it-yourself projects, actual housing prices peaked at 59% above the fundamentals. The higher peak may indicate that housing prices will fall further in the next few years.

The Input-Output tables also change when do-it-yourself projects are included in GDP. Labor output rises by the value of do-it-yourself home improvement and do-it-yourself home maintenance. At the same time, the final output for the housing sector remains fixed. Accordingly, the capital services for owner-occupied housing must fall in order to balance the tables. This change increases the labor share for the overall economy by 0.5% in 2007. In the past, do-it-yourself projects were much more significant than they are now. In 1929, the labor share was 3% higher when do-it-yourself projects are included in the overall economy.