ISYS 520

Ben Graham's Ten Points

Web Queries & User Forms

Joshua Lindsay

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This report contains information regarding an excel program that uses web queries to find information for specific public companies in order to judge whether they "pass" or "fail" Ben Graham's Ten Points as outlined in his article, "Value Avatar".

Executive Summary

When trying to decide which project to do I focused on something that I could use to talk to employers about that they would find relevant and impressive. I talked to Professor Allen about my interests in finance and how I was looking for a job as an analyst when I graduated. He then suggested that I take the first project we did in this class, the Fallen Angel by Ben Graham, and expand upon that to measure a stock based on all ten hurdles that Graham uses to evaluate whether a stock is a good investor pick or not. I became more interested in Ben Graham's ten hurdles after reading about when backtesting stocks, evidence shows that concentrating on stocks that meet just 2 or 3 of these hurdles can produce favorable results.

Below is listed each of Ben Graham's Ten Points used within this project, followed by a brief description on how that figure is calculated.

Ben Graham's Ten Points

1. An earnings-to-price yield of twice the triple-A bond yield. The earnings yield is the reciprocal of the price earnings ratio
2. A price/earnings ratio down to four-tenths of the highest average P/E ratio the stock reached in the most recent five years.
3. A dividend yield of two-thirds of the triple-A bond yield
4. A stock price down to two-thirds of tangible book value per share.
5. A stock price down to two-thirds of net current asset value – current assets less total debt.
6. Total debt less than tangible book value.
7. Current ratio (current assets divided by current liabilities) of two or more.
8. Total debt equal or less than twice the net quick liquidation value as defined in No. 5.
9. Earnings growth over the most recent ten years of seven percent compounded – a doubling of earnings in a ten-year period.
10. Stability of growth in earnings – defined as no more than two declines of five percent or more in year-end earnings over the most recent ten years.

Implementation and Documentation

In order to organize my work I needed to break the project up into five different parts and when each part was completed I put them together in a single project. Part I consists of understanding the 10 hurdles and what information was needed. I did this mainly through researching the paper, as well as reliable financial/investment websites. Once I understood these points, it was important to find where I could retrieve this information from the internet. Part II comprised of creating different web queries in order to retrieve the information. The reason for so many different web queries is that all of the information was gathered from many different sites. Also, below is a list of the terms that I looked up in my queries.

Different Web Queries

Information Queried:

Price Equity Ratio	**Aaa Corporate Bond Yield**	**5-Year Avg. High for P/E**	**Current Liabilities**	**Current Assets**
Stock Price	**Total Debt**	**Current/Short Debt**	**Long-term Debt**	**Tangible Book Value**
Total Outstanding Shares	**Shareholder Equity**	**Total Assets**	**Total Liabilities**	**Preferred Equity**
Dividend Yield	**Current Ratio**	**Growth Rate**	**Goodwill**	**Intangible Assets**

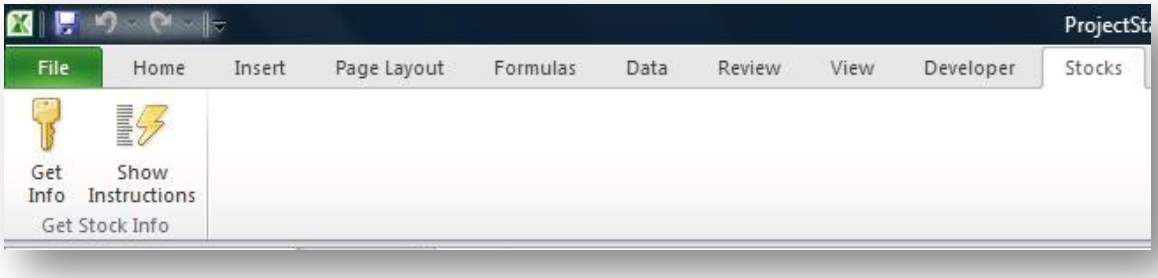
Part III consisted of writing code to find and scrape information off of these web queries. This was simple and straightforward for some of the information, while others required tweaking in order to remove excess information or to retrieve the correct information. This was by far the most time

consuming portion of the project because I needed to create tailored code for each piece of information in order to find the correct pieces. I've included an example of one line of code to find the number of outstanding shares and then convert its units from billions to singles.

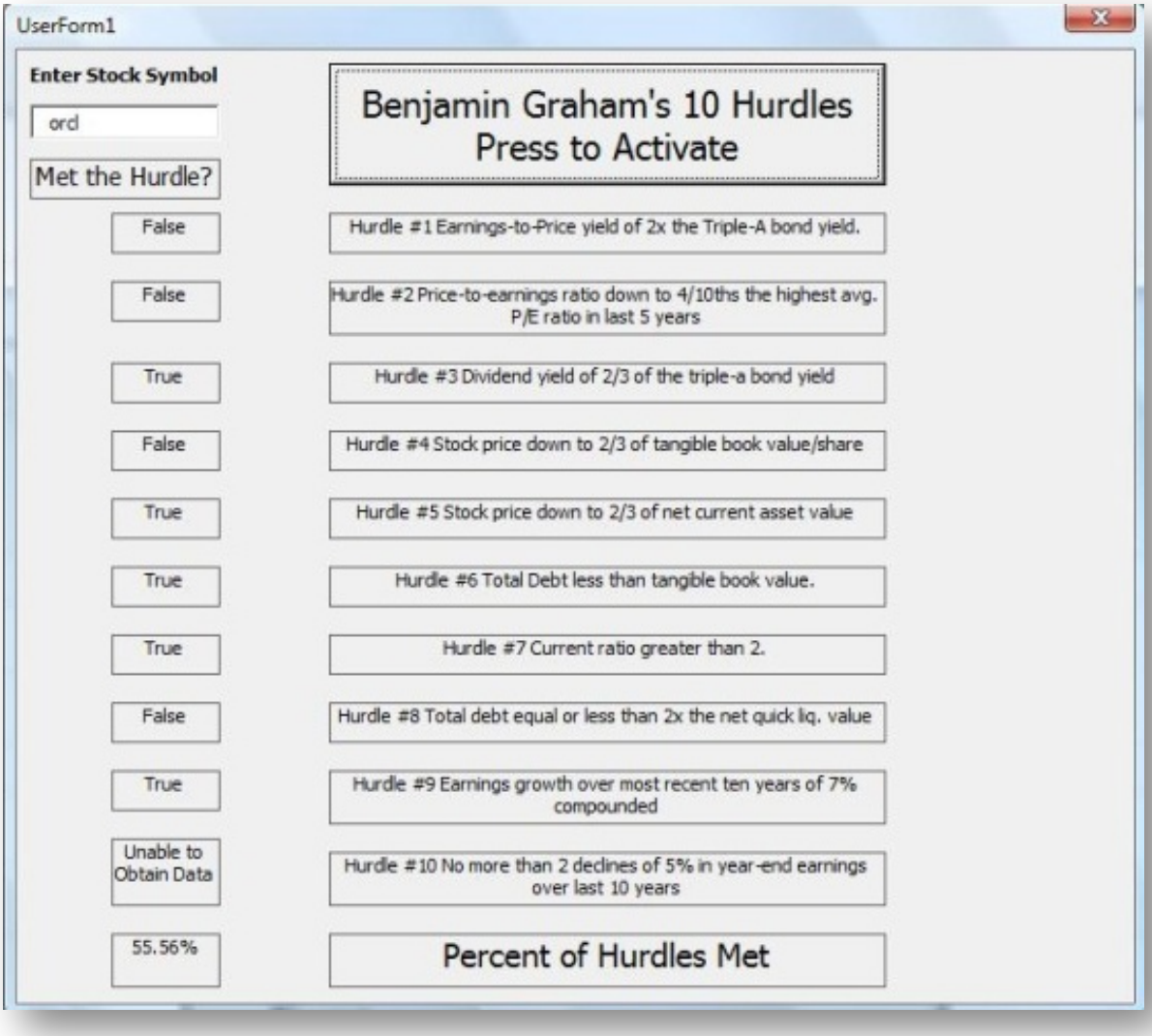
```
OUTSTANDING SHARES OUTSTANDING SHARES OUTSTANDING SHARES OUTSTANDING SHARES OUTSTANDING S
   Dim sharesOut As Variant

     Sheets("Keystats").Select
   Set founDCEll = Cells.Find(What:="Shares Outstanding5", After:=ActiveCell, LookIn:= _
       xlFormulas, LookAt:=xlPart, SearchOrder:=xlByRows, SearchDirection:= _
       xlNext, MatchCase:=False, SearchFormat:=False)
   If TypeName(founDCEll) = "Range" Then
   founDCEll.Select
   Else
   End If
   sharesOut = ActiveCell.Offset(0, 1)
   sharesOut = Mid(sharesOut, 1, Len(sharesOut) - 1)
   If IsNumeric(Mid(sharesOut, 1, 1)) = True Then
   Sheets("CollectData").Select
   Cells(19, 2) = sharesOut * 1000000000
   Else
   Sheets("CollectData").Select
   Cells(19, 2) = 0
   End If
```

Part IV consisted of customizing the ribbon in order to create buttons to provide instructions and execute the project. In order to do this I used the website that Professor Allen provided as well as the UI Editor program. After searching on the internet, I was able to find icons I felt accurately described my enthusiasm and feel for the project. These are under their own tab in the excel ribbon.



Part V consisted of integrating the query information to the buttons through a user form that allows the user to input a stock symbol and run the calculations to determine whether it passes or fails each hurdle. When the user puts the symbol into the text box and clicks the command button, the queries begin to edit for the symbol so that brand new queries do not need to create each time, only edited.



My goal in creating this project was to make it as simple as possible for the user. There are really only two things that they need to do: enter the symbol, and press run. Secondly, it was to make the information output clear so that the user can understand quickly whether a stock is a qualifier or not and by how much.

Learning and Conceptual Difficulties Encountered

As stated above, the objective of this project was to create something that would impress future employers in the financial field. A decent amount of learning occurred for me in trying to understand what each hurdle was trying to measure. I needed to learn new vocabulary and how to calculate new ratios. Also, once I understand what each hurdle needed I had to find that information on the internet. It was a good learning experience for me to become more familiar with those sites.

The tenth hurdle proved to be too difficult for me to solve. It required you to look up and find the year-end earnings for a company and then to see if they had dropped by 5% at any time within the last 10 years. The problem was not in calculating the number but in finding that information on a website where I could use a web query. After unsuccessfully searching for that item, I had to leave it unanswered. I also ran into some difficulties when I tried to calculate compounded earnings growth of 7% or higher for the last ten years. The data which I used and the sites only contained up to the last 5 years. This required me to use the 5 year average compound growth instead of 10 year.

Web Queries

This project models very similarly what we did for our first project with the web query. I had significant difficulty the first time around with the project and so I was hesitant to tackle web queries again with this project. Initially, I ran into the same problems of the edit query not functioning the way I

intended it to or with object variable agreement problems. However, once I got the first query working again, the second came more quickly and so on until by the end I felt much more comfortable. I ended up running a mix of 20 web queries and finds in order to find the information that I needed. Taking the opportunity to teach myself about web queries again was a good experience for me because it can be very usefully if analyzing stocks and it is something that not a lot of people know about.

User Forms

One of the major parts of this project was the user form and integrating that with the buttons and the web query. I had good practice using forms with our project that found and edited different companies within a database. Although, something I needed to learn how to do in this project was to create and design my own user form. I went through a couple of initial attempts before settling on this last design. It was a challenge to display the data in a way that would be meaningful and easy to understand for the user. I wanted to include each hurdle and describe what it meant so that the user would not necessarily need to be completely financial savvy to understand it.

One portion that I didn't include initially but then later added for the final product was the percent complete portion at the bottom of the form. I read from Graham's article that companies who were able to pass two or three of these hurdles could be potentially good investments. I thought it would be a good idea to distinguish clearly and quickly how good one investment was from the other. That is why I included the % of Hurdles Met section on the bottom of the form.

Assistance

In order to complete this project, I consulted with Professor Allen on project details and on a scope that would be manageable. Initially I had wanted to create a form that took information from balance sheets but we had agreed that the Ten Points would be more unique. Additionally, I used past projects to help guide me when I became stuck on certain parts of my project – web queries and user forms were the majority of my past projects consulted. In order to complete the ribbon wizard I used the website that Professor Allen provided to learn about how to implement ribbon changes. I also used his projects to better understand the code needed to do this. Lastly, I used various sites on the internet to learn more about each specific part of the hurdles as well as to better understand writing the code.