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University of Illinois Urbana Champaign - Siebel School of Computing and Data Science

**Narrative Visualization Essay Report**

**Explanations behind USA's Declining popularity of Domestic Autos**

* **Messaging. What is the message you are trying to communicate with the narrative visualization?**

Due to globalization, trade agreements, profit margins, recessions and COVID-19, there has been a significant decline in popularity of domestic autos in the U.S. over the past 50 years, as seen in the data from the Federal Reserve Bank of St. Louis (CUSR0000SETA01, CPIAUCSL, DAUTONSA, DLTRUCKSNSA and DAUPSA). This trend will likely continue and can be explained using this data from FRED along with national events.

* **Narrative Structure. Which structure was your narrative visualization designed to follow (martini glass, interactive slide show or drop-down story)? How does your narrative visualization follow that structure? (All of these structures can include the opportunity to "drill-down" and explore. The difference is where that opportunity happens in the structure.)**

I use Martini Glass approach as a Narrative Structure. I take the user through slide by slide alongside my author-driven content of observations, only allowing the user to chronologically proceed to the next section by incrementally stepping through each of the four slides or moving back to any of the previous slides. When the user moves from the third to the fourth slide, they will experience my jumping off point where the reader can freely view all the graphs, observe sources, and explanations behind the observations that exist in slides one to three. Furthermore, they can hover their mouse over ALL the data to see exact values of those respective points that were observed in slides 1-3. **They can even choose to filter betowflasdkjfdsla;fkjasdfkhasdf;lkj**

* **Visual Structure. What visual structure is used for each scene? How does it ensure the viewer can understand the data and navigate the scene? How does it highlight to urge the viewer to focus on the important parts of the data in each scene? How does it help the viewer transition to other scenes, to understand how the data connects to the data in other scenes?**

Slide show 9-1-4

* **Scenes. What are the scenes of your narrative visualization? How are the scenes ordered, and why**
* **Annotations. What template was followed for the annotations, and why that template? How are the annotations used to support the messaging? Do the annotations change within a single scene, and if so, how and why**
* **Parameters. What are the parameters of the narrative visualization? What are the states of the narrative visualization? How are the parameters used to define the state and each scene?**
* **Triggers. What are the triggers that connect user actions to changes of state in the narrative visualization? What affordances are provided to the user to communicate to them what options are available to them in the narrative visualization?**

The Report

Due to globalization, trade agreements, profit margins, recessions and COVID-19, there has been a significant decline in popularity of domestic autos in the U.S. over the past 50 years, as seen in the data from the Federal Reserve Bank of St. Louis (CUSR0000SETA01, CPIAUCSL, DAUTONSA, DLTRUCKSNSA and DAUPSA). This trend will likely continue and can be explained using this data from FRED along with national events.

* In the start of the 1980s shortly after an energy crisis and during the boom of the semi-conductor, the Big Three U.S. automakers experienced intense competition with Japan’s auto market to create modern autos (cars). This global competition drove down the CPI of New Vehicles in U.S. City Average with respect to other goods and services at large. This opened the way for tighter profit margins.
  + In November 2021, Larry Printz wrote that during the 1980s the Big Three had to engineer cars with newer technology and meet an unprecedented demand for smaller fuel-efficient cars.
  + In 1979 Peter J. Schuyten wrote in the New York Times that “The Menlo Park, Calif., market research company estimates that with the addition of such functions as transmission control and electronic braking, the volume could rise to as much as $3.9 billion by 1990; and this for an industry whose total billings this year will amount to around $6 billion.” Revealing positive predictions for manufacturers to keep driving up production.
* 1994 North American Free Trade Agreement (NAFTA) is officially enacted buy Canada, Mexico and USA. This shaped the landscape of the North American auto manufacturing industry to outsource more manufacturing to Mexico due to cost of labor (Klier, Thomas H., and James Rubenstein). If 50 to 62.5 percent of the auto was assembled in North American U.S. tariffs would be lightened or avoided altogether for each assembled auto.
* 1995, production declines as America’s Big Three lose Market Share to Japanese makers like Toyota, Honda due to Keiretsus in Diplomacy. A Yale Undergraduate research journal in 2020 explained:

“These tensions between the United States and Japan came to a fore in the 1995 auto dispute, in which President Clinton threatened to enact $6 billion in tariffs on luxury auto imports to the US from Japan in response to Japanese unwillingness to make room for American auto part imports in Japan. The lesson of the dispute, and its recognition of the increasingly globalized supremacy of the Japanese auto industry, speaks to the potency of Japan’s keiretsus to delay and avoid trade liberalization” (Boers, Jasper).

Due to this aggressive style of trade that did not allow the U.S. to enter the Japan auto market easily. The U.S. lost out on sale opportunities within Japan’s economy post Gulf because it’s policy makers argued that American manufacturing did not meet the Japanese auto market requirements. President Bill Clinton scheduled auto industry tariffs on the Japanese market for June 28, 1995. However, the tariffs never came into effect due to the Memorandum of Understanding (MOU) between the U.S. and Japan. (American Automotive Policy Council 2)

* At the turn of the millennium into the 2000s, a report from U.S. Department of Transportation the sales of lightweight trucks had fully caught up with autos in both use and sales for the first time.
  + The U.S. Department of Transportation noted the “Popularity of light trucks as personal vehicles continues to increase- retail sales of trucks for 2000 amount to 8,965,000 units sold.”
* With NAFTA’s ten-year phase-out of major trade barriers, which ended in 2004, foreign automakers began laying roots in Mexico. Brands like BMW, Mercedes-Benz, Kia, Mazda, and Audi unveiled plans to launch local assembly operations between 2013 and 2020. This influx boosted the number of vehicle manufacturers assembling cars in Mexico from 11 to 21 from 2004 to 2020 (Klier, Thomas H., and James Rubenstein).
* 2012 we see nearly a full recovery in the amount domestic auto production from the 2008 recession. Federal Bailouts, improved supplier relations and pent-up demand led to increases in Domestic Auto Production until about 2012.
  + Jul 2007 – 346.0 units by thousands
  + Jul 2008 – 375.4 units by thousands
  + Jan 2009 – 107.5 units by thousands
  + Jul 2012 – 361.4 units by thousands
* By the year 2015 the decision of USA automakers to remain conservative in the public demand for autos and strategic manufacturing to again produce more higher-margin vehicles like SUVs led to another decline in Domestic Auto Production. In 2015, industry experts Austan D. Goolsbee and Alan B. Krueger noted that they were pleased with the demand for autos since 2009 but also surprised since there had been a steady decrease in demand for the Big Three automakers for many years prior to 2009.
* In 2018 a notable milestone for the popularity or light weight trucks over autos was imminent with the Transportation Energy Data Book Edition 38 reported “11,609,000 light trucks were sold in 2018 which was 69% of new light vehicle sales” (Davis , Stacy C. C., and Robert  G. Boundy.) This marked an undeniable decline of the popularity of Autos in the USA.
* By 2020 Production drops significantly more than it already was. COVID-19 caused chip shortages and labor disruptions.

Sources

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