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Reopening Main Street:

What it will take to help small- and medium- sized enterprises thru 2020

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Abstract

In 2020, small- and medium-sized enterprises will need a lot of government and bank help to both reopen to survive. Different types of businesses will need different types of help. Using a unique dataset, we assess how much and what type of financing these firms will need. Based on our analysis, restaurants will require very significant help to survive, depending on the extent of the closure period. Construction companies will need help reopening.

Introduction

The coronavirus disease that has become widespread as of the beginning of April 2019 (COVID-19) has evolved into an unprecedented global risk and become an existential threat for many countries. It has also cast a foreboding shadow across the entire world economy. As the pandemic has rapidly changed our societal and economic activities, with an unprecedented number of businesses shuttered for the time being, revenues drastically reduced, and historical layoffs continuing, much remains uncertain, especially the extent financial losses.

Most small- and medium-sized enterprises have seen a substantial decline in revenues and many have been forced to close for an uncertain period. These firms will need help both surviving the period of business closure and in reopening. In this note, we estimate how much financial help they will need, and we demonstrate differences between business size and type: how much financing each will require to survive and to reopen. The help will need to come from many sources including the banks, the government as well as traditional equity investors. The help will likely be in a mixture of forms including loans, grants and equity infusions.

To conduct this analysis, we use a unique resource — the Credit Research Database. We have been building this financial statement database and loan payment information source in partnership with banks over the past two decades. The analysis conducted here is based on the most recent financial statements for Small and Medium Sized Enterprises in the United States. We have excluded financial firms, real estate firms, not-for-profits, project finance and government entities.

Methodology

Suppose a person with a history of running a successful business that was recently closed went to a bank or an investor or a family member for a loan in order to survive the period of closure and to reopen. The financier would reasonably ask for a business plan that addresses two main questions: how much money per month will you need to survive the closure? and how much money will you need to reopen? To project how much money is required to survive the business closure, one would start with cash on hand and then estimate the fixed costs per month as well as what the variable costs that cannot be cut are. As an example, if the sum of these two costs is $10,000 and cash on hand is $20,000, one can survive two months. To reopen requires financing to purchase inventory and to pay employees before revenue starts again. A retailer will likely need money to restock. If a retail shop "turns over" their inventory nine times per year, and their annual revenue is $900,000 they need $100,000 to restock. A construction company requires additional capital to pay their employees before the firm is paid for their projects. If a construction company is typically paid every 30–60 days for "work-in-progress," and their annual revenue is $160,000 with a 25% margin, they will need $10,000–$20,000 to pay their workers and other expenses when they reopen, before being paid for the first set of projects.

To write such a business plan, the business owner must use a budget more detailed and specific than simply balance sheets, income statements, and cash flow statements. Nevertheless, by making some reasonable assumptions, we can arrive at estimates as to what the financing requirements would be.

Income Statement
Sales/Revenue
- Cost of Goods Sold (COGS)
- Selling, General and Administrative Expense (SGA)
- Depreciation/Amortization
- Other Operating Expense
Total Operating Profit
+ Financial Income
- Interest Expenses
Profit before Tax
- Tax
Net Income

At a high level, an income statement takes Sales and subtracts "Cost of Goods Sold" to arrive at gross profit. From gross profit we subtract "Selling and General Administrative Costs" (SGA), "Depreciation and Amortization" (D&A), and "Other Operating Expenses" to arrive at "Operating Profit;" from "Operating Profit" we subtract “Interest Expense” and add back whatever “Financial Income” there is to arrive at “Profit before Tax.” Finally, taxes are subtracted to arrive at Net income.

When a business closes, Sales declines drastically or hits zero, and Costs of Goods sold will disappear. Selling costs will largely go away, but administrative costs will not. The D&A does not go away, but it is "non-cash." The cash expense associated with D&A is capital expenditures, and there will likely be some even though many businesses will seek to postpone whatever capital expenditures they can. We assume that Interest expense will need to be paid, while taxes may not be. We approximate the costs of running a closed business, as 50% of Operating Expenses (SGA + D&A + Other Operating Expense) plus Interest Expense. The "50%" is a round number in the middle-ground, that we use in the absence of a more precise alternative for this exercise—in reality, every firm differs. As this estimate is the cost per year, we divide by 12 to obtain the monthly cost. If this cost is $20,000, and cash on hand is $40,000, we estimate that the firm has two months until zero cash or two months to survive without additional aid. Further, the additional support they need to survive six months would be $80,000.

$$\text{Months until zero cash} = \frac{12 \times \text{Cash}}{\frac{1}{2}\,\text{Operating Expenses} + \text{Interest Expense}}$$

Assets	Liability + Equity
Current Assets	Current Liabilities
Cash	Accounts Payable
Inventories	Current Portion of Long Term Debt
Accounts Receivable	**Total Current Liabilities**
Other Current Assets	Long Term Debt
Total Current Liabilities	**Total Liabilities**
Property and Equipment	Shareholder's Equity
Other Asset	**Total Liabilities and Shareholders' Equity**
Total Assets	

To reopen, a business may need to rebuild their working capital —to purchase inventory and incur "accounts receivables." We can use these balance sheet concepts to estimate how much money this process requires. If the typical retail company has inventory stock on their balance sheet that is 1/12 of their annual sales, they would need one month of sales to finance the purchase of these inventories. Further, if their accounts receivable is typically 2/12 of their annual sales, they would need two months of sales to finance these receivables, assuming that, as a newly open business, they need to pay their bills — their accounts payable — shortly after receipt. Therefore, a rough estimate of much money they would require to reopen is the sum of accounts receivable plus the amount of inventory they had on their balance sheet at the end of the last fiscal year.

$$\text{Required Financing} = \frac{12 \times (\text{Accounts Receivable} + \text{Inventories})}{\text{Sales}}$$

Results

The following table shows the percentage of firms that can survive at most one month, three months and six months, by company size. We group firms into four groups based on sales. The cutoffs are chosen such that we have about one-fourth of the firms in each group. For the smallest firms — firms with less than $4.2 million in sales, 41% will need help to survive more than one month; 62% will need help to survive three months, and 75% will need help to survive more than six months. For the biggest firms with more than $80 million in sales, the situation is only somewhat better: 37% will need help to survive more than one month; 56% will need help to survive more than three months, and 70% will need help to survive more than six months.

Percentage of firms that will survive x months or fewer without help

Size in Sales ($)	Count	1 Month	3 Months	6 Months
Under 4.2m	17,913	41	62	75
4.2m-15.3m	17,911	41	62	76
15.3m-80m	17,910	39	57	71
Over 80m	17,912	37	56	70

The next table presents results by business type — we look at the 15 most common 6-digit North American Industrial Classification system. We see substantial differences by business type. For example, only 12% of the Highway, Street, and Bridge Construction sector will need help surviving beyond one month, and only 32% will need help surviving more than 6 months. 60% percent of Restaurants will need help surviving more than one month, and 89% will need help surviving more than 6 months. These differences are consistent with restaurants requiring less working capital than construction companies, because restaurants are paid more frequently, whereas, construction companies pay their employees weekly or biweekly, but are paid upon completing projects or reaching project milestones.

Percentage of firms that will survive x months or fewer without help

Most Frequent 6-digit NAICS Code	1 Month	3 Months	6 Months
Highway, Street and Bridge Construction	**12**	**21**	**32**
Engineering Services	14	25	35
Gasoline Stations with Convenience Stores	28	46	62
Activities for Oil & Gas Operations	28	52	71
Construction Contractors	32	52	68
Building Construction	38	60	73
General Freight Trucking	38	64	82
Computer Systems Design Services	41	60	73
Wholesale of Machinery and Equipment	44	64	79
Wholesale of Motor vehicle Supplies	47	76	90
Offices of Doctors and Dentists	47	63	77
Nursing Care Facilities	51	74	87
Supermarkets and Grocery Stores	56	77	88
Restaurants	**60**	**80**	**89**
Offices of Lawyers	61	79	87

The next table shows the percent of firms that will need more than one month, three months, and six months of sales to reopen, by firm size. Here, we see meaningful differences based on firm size. For the smallest firms, those with less than $4.2m in sales, 40% will need more than one month, and only 17% will need more than six months. In contrast, for the largest firms, 89% will need more than one month, and 40% will need more than three months. This finding is indicative that larger firms have more noncash, working capital on their balance sheet as measured by Accounts Receivable plus Inventories divided by monthly sales.

Percentage of firms that will need X months of revenue or more to reopen

Size in Sales ($)	Count	1 Month	3 Months	6 Months
Under 4.2m	**17,913**	**40**	17	6
4.2m-15.3m	17,911	73	31	5
15.3m-80m	17,910	84	37	5
Over 80m	**17,912**	89	**40**	5

The next table shows the percentage by specific sector that will need more than one month, three months, and six months of financing based on firm sales. We see substantial differences by firm type. Gasoline Stations with Convenience Stores will need the least amount, with only 20% requiring more than one month of sales, and 1% needing more than three months. Building Construction companies are among those that will require much more: 90% will need more than 1 month, and 26% will need more than six months. Wholesalers of Motor Vehicle Supplies will require the most, with 96% needing more than 1 month, and 37% needing more than six months. We also see that Restaurants, Offices of Doctors and Dentists, and Gasoline Stations have relatively small amounts of noncash working capital on their balance sheets, while Wholesalers and Construction Companies have relatively large amounts of noncash working capital on their balance sheets.

Percentage of firms that will need X months of revenue or more to reopen

Most Frequent 6-digit NAICS Code	1 Month	3 Months	6 Months
Gasoline Stations with Convenience Stores	20	1	0
Offices of Doctors and Dentists	15	2	0
Restaurants	**8**	**0**	**0**
Supermarkets and Grocery Stores	68	2	0
Computer Systems Design Services	88	24	1
Construction Contractors	85	37	1
General Freight Trucking	77	2	1
Highway, Street and Bridge Construction	91	26	1
Nursing Care Facilities	76	6	1
Offices of Lawyers	20	8	1
Engineering Services	85	42	3
Activities for Oil & Gas Operations	89	33	6
Wholesale of Machinery and Equipment	90	61	12
Building Construction	**90**	**50**	**26**
Wholesale of Motor vehicle Supplies	96	87	37

Conclusion

Given the current environment, smaller firms will require more financial assistance to survive, as they have less cash relative to estimated fixed expenses, to carry them through a closure period. Medium-sized enterprises will need more financing to reopen, as their balance sheets typically have proportionately more “non-cash current assets.” Restaurants are among the least equipped to survive a closure, but, at the same time, they will need the least financing upon reopening. Builders are among the best equipped to survive a closure, but will they need the most financing upon reopening. These differences reflect the differences in the business models: restaurants are paid by their customers and pay their employees frequently, whereas builders are only paid upon completion of projects and project milestones.

Nevertheless, these results are generalized, as each firm differs, and many of the details surrounding the various plans for loans and the financing small business have not yet been finalized.

Appendix: Most Frequent Six-Digit NAICS Codes

NAICS Category name	NAICS code/codes	Number of Firms	Total Revenue ($ mm)
Offices of Doctors and Dentists	621111, 621210	3182	298
Restaurants	722513, 722511	2724	719
Construction Contractors	238220, 238210, 238990	1911	1852
Building Construction	236117	1760	92
Offices of Lawyers	54111	1382	307
Engineering Services	541330	968	1065
Activities for Oil & Gas Operations	211111, 213112	926	1904
Gasoline Stations with Convenience Stores	447110	788	128
Nursing Care Facilities	623110	644	84
Wholesale of Machinery and Equipment	423830	562	241
Highway, Street and Bridge Construction	237310	513	2172
Computer Systems Design Services	541512	512	138
General Freight Trucking	484121	512	229
Wholesale of Motorvehicle Supplies	423120	449	510
Supermarkets and Grocery Stores	445110	416	608