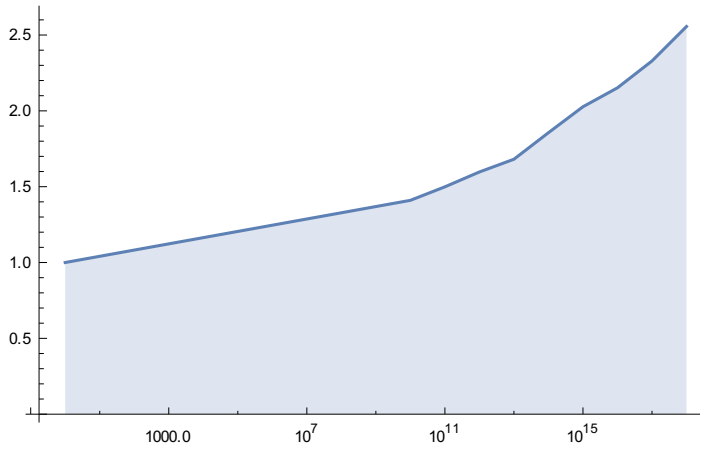
In[17]:=
```
(* List of fast Lagarias-Miller-Odlyzko alpha factors found by running pi(x) benchmarks. *)

alphaLMO = {(* {x, alpha} *){1, 1}, {10^10, 1.410}, {10^11, 1.499}, {10^12, 1.597},
  {10^13, 1.681}, {10^14, 1.856}, {10^15, 2.027}, {10^16, 2.152}, {10^17, 2.329}, {10^18, 2.556}}
```

Out[17]=
```
{{1, 1}, {10 000 000 000, 1.41}, {100 000 000 000, 1.499}, {1 000 000 000 000, 1.597},
 {10 000 000 000 000, 1.681}, {100 000 000 000 000, 1.856}, {1 000 000 000 000 000, 2.027},
 {10 000 000 000 000 000, 2.152}, {100 000 000 000 000 000, 2.329}, {1 000 000 000 000 000 000, 2.556}}
```

In[18]:=
```
ListLogLinearPlot[alphaLMO, Filling → Bottom, Joined → True]
```

Out[18]=



In[15]:=
```
(* alpha is a tuning factor that balances the compuation of the easy special
 leaves and the hard special leaves. The formula below is used in the file
 src/primecount.cpp to calculate a fast alpha factor for the computation of pi(x). *)
```

In[19]:=
```
NonlinearModelFit[alphaLMO, a(Log[x])^2 + b Log[x] + c, {a, b, c}, x]
```

Out[19]=
$$\text{FittedModel}\left[1.00404 - 0.00896211\,\text{Log}[x] + 0.001103\,\text{Log}[x]^2\right]$$