

Inheritance, Accounting, and Sibling Rivalry in an Early Modern Merchant Family

jessesadler.github.io/debkeep

Difficulties with non-decimal currencies

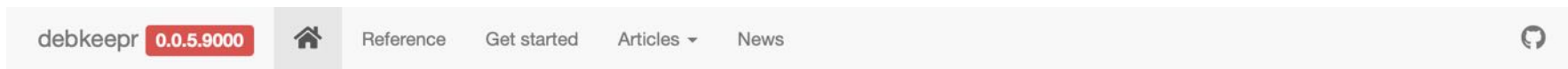
- One value is represented by three separate units.
- The solidus and denarius units have non-decimal bases.
- The bases differed by currency.

Compound unit arithmetic

	£	s.	d.
	28	15	8
	32	8	11
	54	18	7
	18	12	9
	<hr/>		
Unit total	132	53	35
Normalization	Carried forward	2	2
	Divide by base	-	55 / 20
	Remainder	-	15
	<hr/>		
Answer	£134	15s.	11d.

debkeepr: Analysis of Non-Decimal Currencies in R

jessesadler.github.io/debkeepr/



debkeepr: Analysis of Non-Decimal Currencies

`debkeepr` integrates non-decimal currencies that use the tripartite system of pounds, shillings, and pence into the methodologies of Digital Humanities and the practices of reproducible research. The package makes it possible for historical non-decimal currencies to behave like decimalized numeric values through the implementation of the `deb_lsd` and `deb_decimal` vector classes or types. These types are based on the infrastructure provided by the [vctrs package](#). `debkeepr` simplifies the process of performing arithmetic calculations with non-decimal currencies — such as adding £3 13s. 4d. sterling to £8 15s. 9d. sterling — and also provides a basis for analyzing account books with thousands of transactions recorded in non-decimal currencies. The name of the `debkeepr` package derives from this latter capability of analyzing historical account books that often used [double-entry bookkeeping](#).

Installation

You can install `debkeepr` from GitHub with [remotes](#):

```
# install.packages("remotes")
remotes::install_github("jessesadler/debkeepr")
```

Please open an [issue](#) if you have any questions, comments, or requests.

Historical Background

The `debkeepr` package uses the nomenclature of [l](#), [s](#), and [d](#) to represent pounds, shillings, and pence units in non-decimal currencies. The abbreviations derive from the Latin terms [libra](#), [solidus](#), and [denarius](#). The libra was a Roman measurement of weight, while the solidus and denarius were both Roman coins. The denarius was a silver coin from the era of the Republic, in contrast to the golden solidus that was issued in the Late Empire. As the production of silver coins overtook that of gold by the 8th century, a solidus came to represent 12 silver denarii coins, and 240 denarii were — for a time — made from one libra or pound of silver. The custom of

Links

Browse source code at
<https://github.com/jessesadler/debkeepr/>

Report a bug at
<https://github.com/jessesadler/debkeepr/issues>

License

[Full license](#)

MIT + file [LICENSE](#)

Developers

[Jesse Sadler](#)

Author, maintainer 

Dev status

build passing

 codecov 99%

lifecycle experimental

Normalization

```
> library(debkeepR)
> deb_normalize(c(132, 53, 35))
<deb_lsd[1]>
[1] 134:15s:11d
# Bases: 20s 12d
```

```
> deb_normalize(c(132, 53, 35),
  bases = c(30, 18))
<deb_lsd[1]>
[1] 133:24s:17d
# Bases: 30s 18d
```

```
> deb_lsd(15, 3, 8) * 32
<deb_lsd[1]>
[1] 485:17s:4d
# Bases: 20s 12d
```

Compound unit

	£	s.	d.
	28	15	8
	32	8	11
	54	18	7
	18	12	9
Unit total	132	53	35
Carried	2	2	-
Divide by	-	55 / 20	35 / 12
Remainder	-	15	11
Answer	£134	15s.	11d.

RULE II. "If the multiplier be a composite number, whose component parts do not exceed 12, multiply first by one of these parts, then multiply the product by the other. Proceed in the same manner if there be more than two."

Ex. 1st.] L. 15 3 8 by 32 = 8 × 4

L. 121 9 4 = 8 times.

L. 485 17 4 = 32 times.

id	credit	debit	date	l	s	d	journal	ledger
1	2	1	16330101	1000	15	7	1	1/1
2	2	3	16330101	477	10	0	1	1/1
3	2	4	16330101	55	0	6	1	2/1
4	2	5	16330101	240	0	0	1	2/1
5	2	6	16330101	229	0	0	1	2/1
6	2	8	16330101	3	17	8	1	3/1
7	7	2	16330101	150	0	0	1	1/2
8	9	11	16330104	360	0	0	1	4/3
9	1	9	16330104	144	0	0	2	3/1
10	5	10	16330104	120	0	0	2	3/2
11	13	12	16330109	180	0	0	2	4/4
12	1	13	16330109	120	0	0	2	4/1
13	14	7	16330109	40	0	0	2	2/5
14	5	15	16330103	120	0	0	2	5/2
15	16	15	16330103	3	4	0	2	5/5
16	3	12	16330103	270	0	0	2	4/1
17	14	7	16330103	90	0	0	2	2/5
18	18	17	16330117	566	13	4	3	5/6
19	19	18	16330117	340	0	0	3	6/6
20	13	20	16330123	564	1	5	3	6/4
21	23	21	16330123	2	11	11	3	7/7
22	19	18	16330123	225	12	7	3	6/6

Entering data into
a spreadsheet

```
deb_gather_lsd(data)
```

```
# A tibble: 177 x 5
```

	id	credit	debit	date
	<dbl>	<dbl>	<dbl>	<date>
1	1	2	1	1633-01-01
2	2	2	3	1633-01-01
3	3	2	4	1633-01-01
4	4	2	5	1633-01-01
5	5	2	6	1633-01-01
6	6	2	8	1633-01-01
7	7	7	2	1633-01-01
8	8	9	11	1633-01-04
9	9	1	9	1633-01-04
10	10	5	10	1633-01-04

```
# ... with 167 more rows
```

lsd
<lsd[20s:12d]>
1000:15s:7d
477:10s:0d
55:0s:6d
240:0s:0d
229:0s:0d
3:17s:8d
150:0s:0d
360:0s:0d
144:0s:0d
120:0s:0d

Links

- debkeepr package documentation
 - <https://jessesadler.github.io/debkeepr/>
- Code for visualizations
 - <https://github.com/jessesadler/thwg-2021>
- Slides
 - <https://jessesadler.com/slides/bafa2022.pdf>



Jan della Faille
de Oude

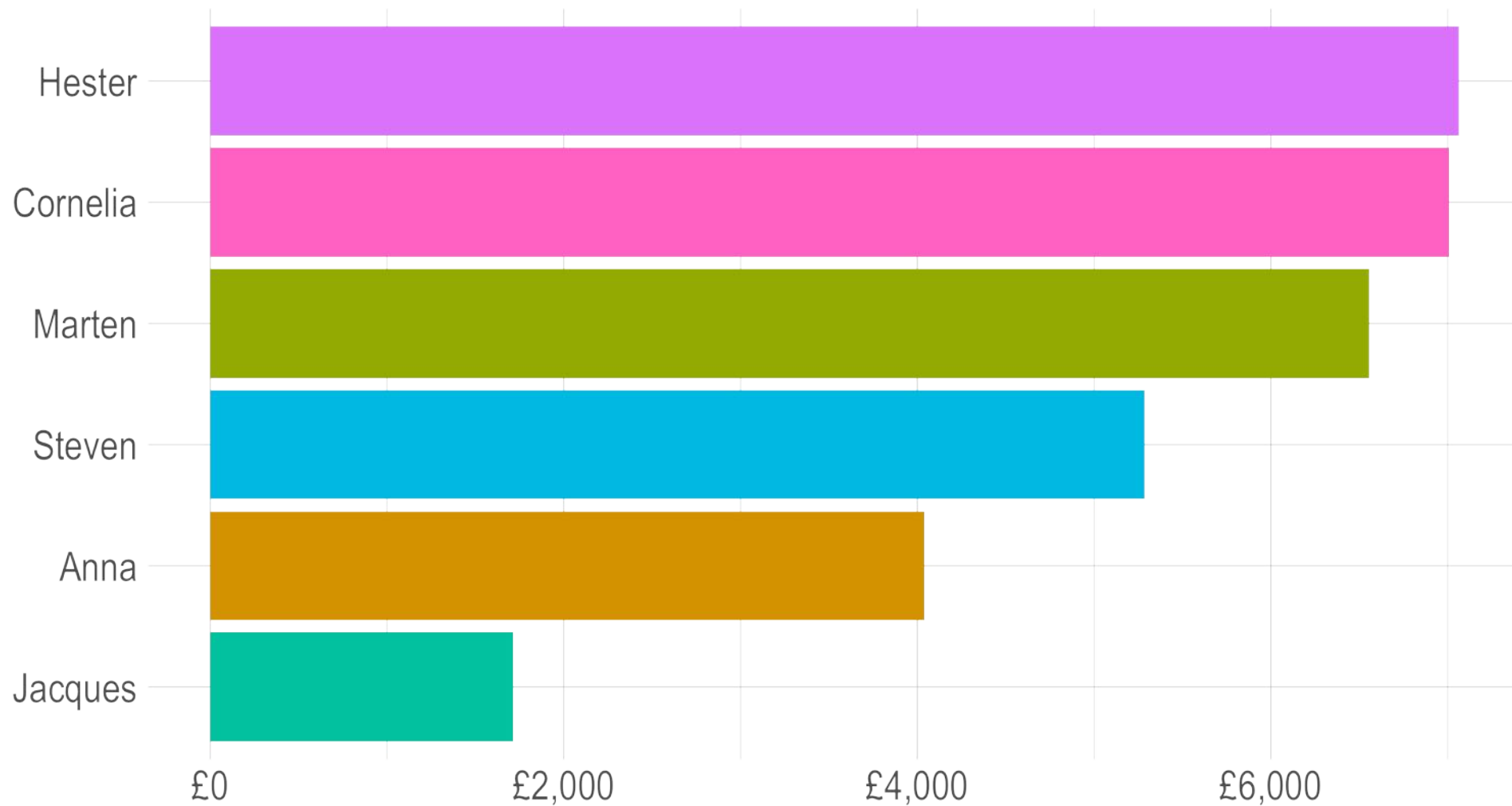
(c. 1515–1582)

Trade network of Jan de Oude 1558–1582



- Executors
 - **Jan** (c. 1542–1618): Eldest but not successor to his father.
 - **Marten** (c. 1544–1620): Chosen as his father's primary successor.
 - **Jacques** (c. 1549–1615): Rival to Marten. Moved to Haarlem in 1584.
- Troublesome sons
 - **Carlo** (c. 1546–1617): Constant source of trouble for his siblings.
 - **Steven** (c. 1550–1621): Had two marriages to servants annulled.
- Daughters
 - **Anna** (c. 1543–1622): Married Robert van Eeckeren, associate of her father.
 - **Maria** (1555–1578): Married and had three children before her early death.
 - **Hester** (c. 1558–1643): Married Daniel van der Meulen. Left Antwerp in 1584.
 - **Cornelia** (c. 1563–1582): Died shortly after her father in 1582.

Maternal inheritance, 26 December 1583



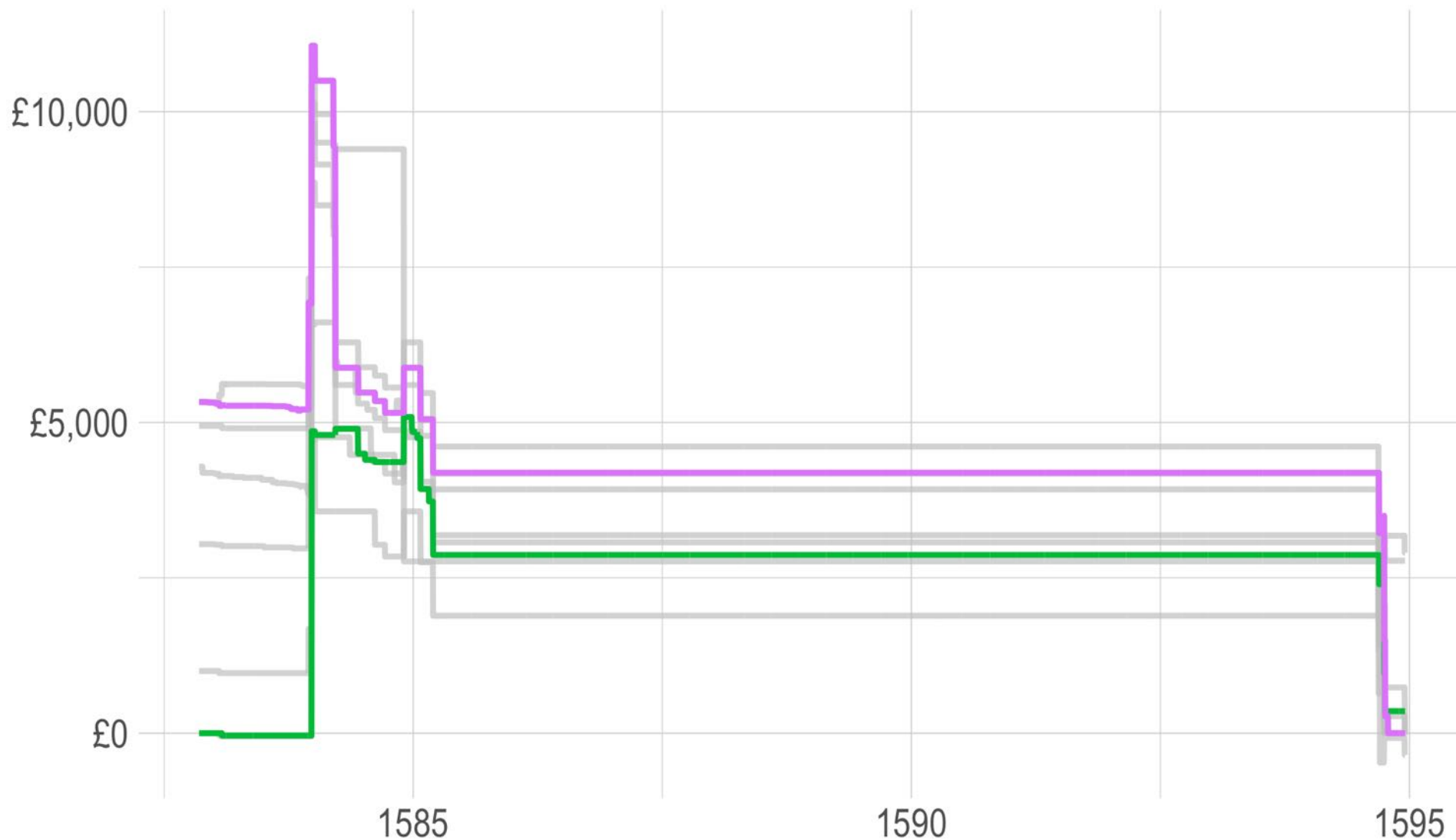
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Account book of the estate of Jan de Oude



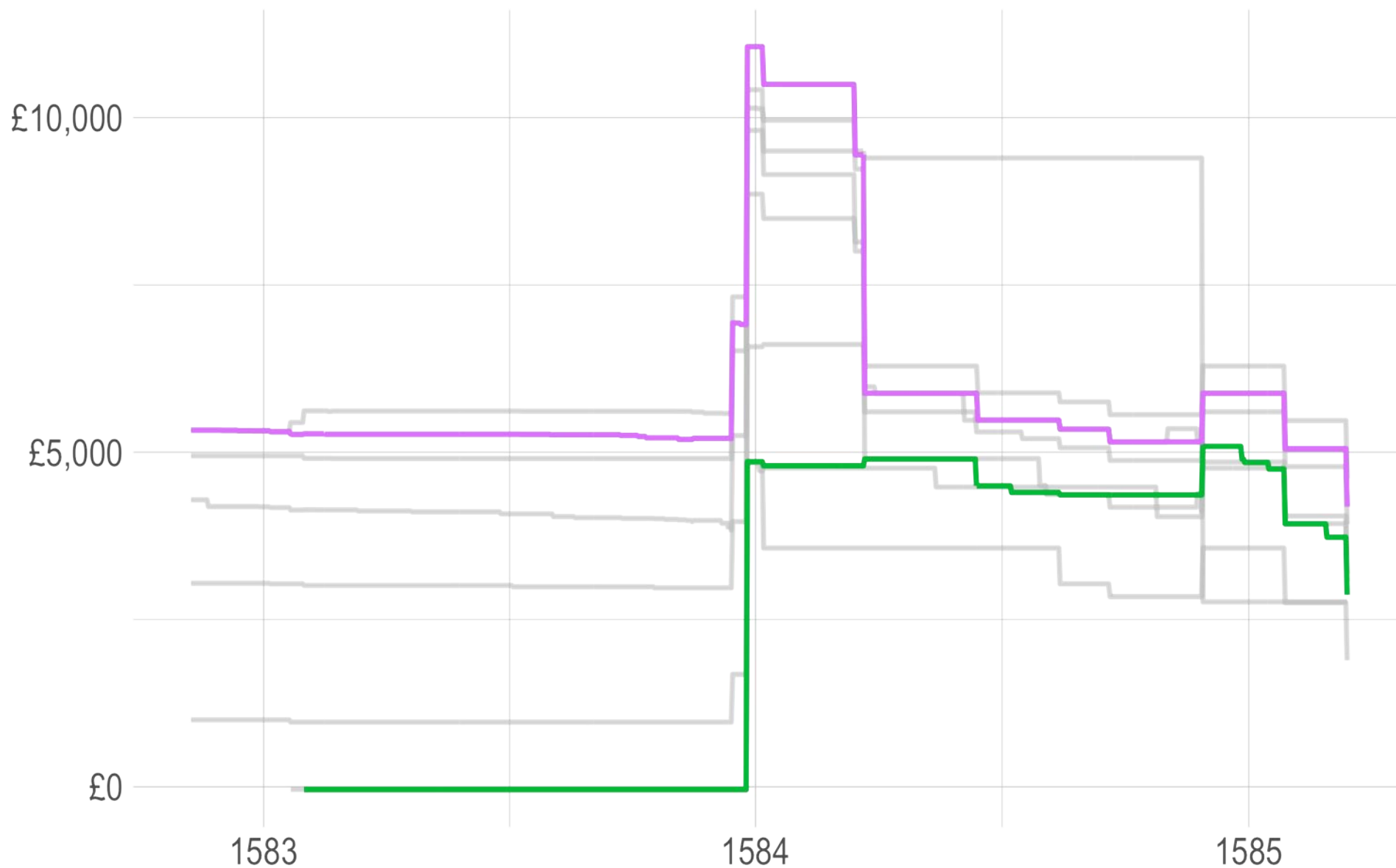
Inheritance of the heirs of Jan de Oude, 1582–1594

Highlighting the inheritance of Hester and Carlo



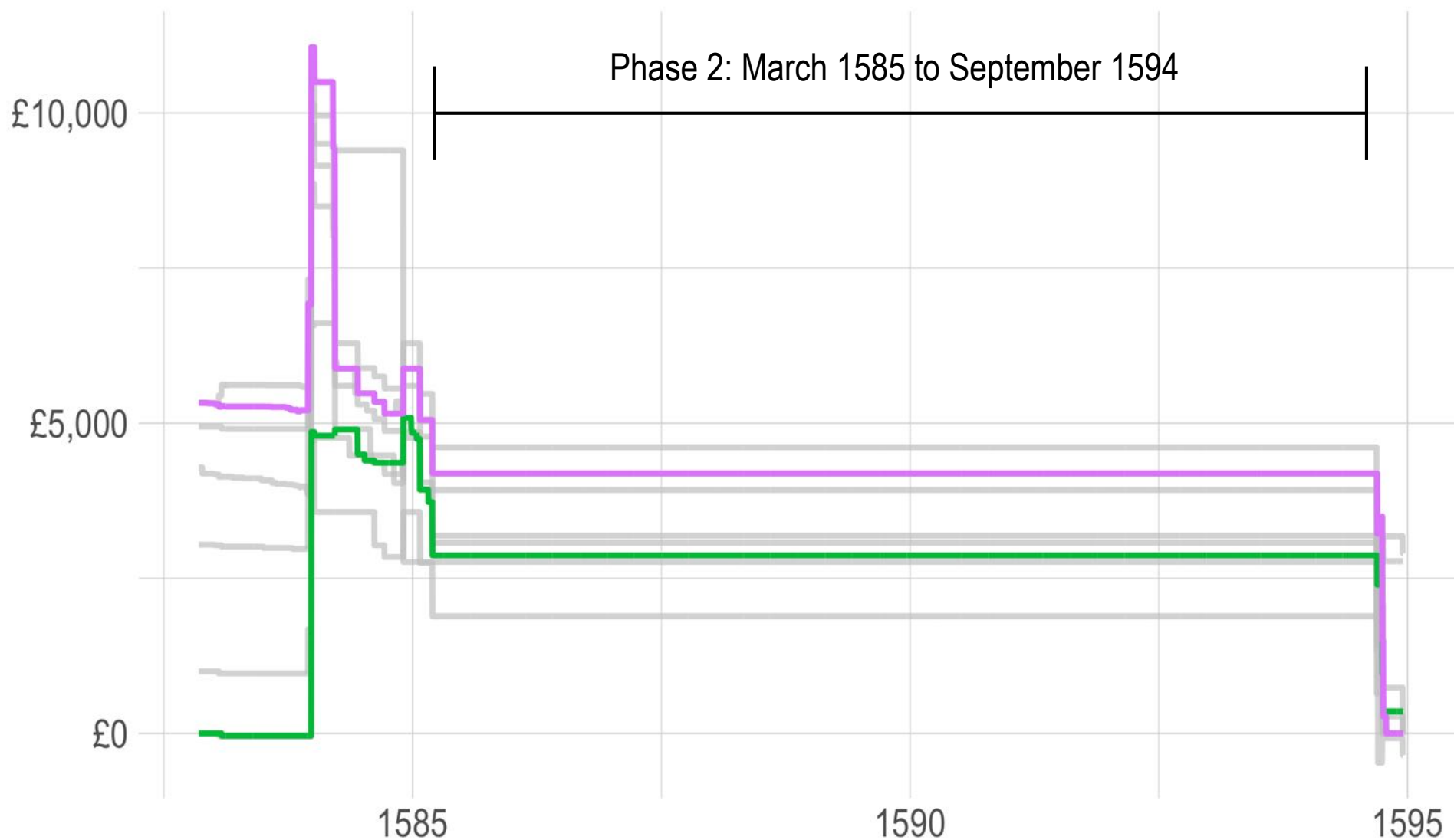
Phase 1: Novemeber 1582 to March 1585

Highlighting the inheritance of **Hester** and **Carlo**



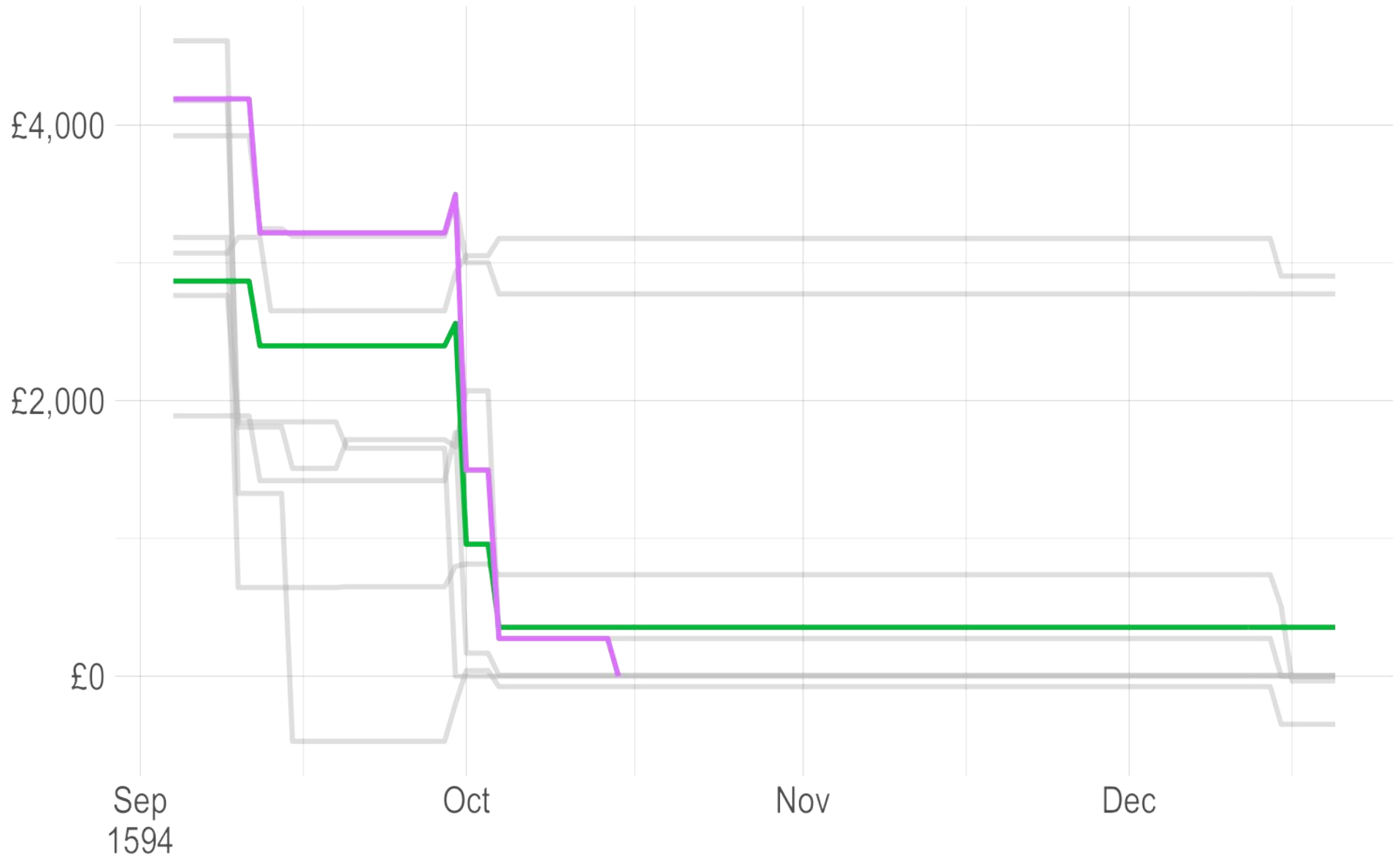
Inheritance of the heirs of Jan de Oude, 1582–1594

Highlighting the inheritance of **Hester** and **Carlo**



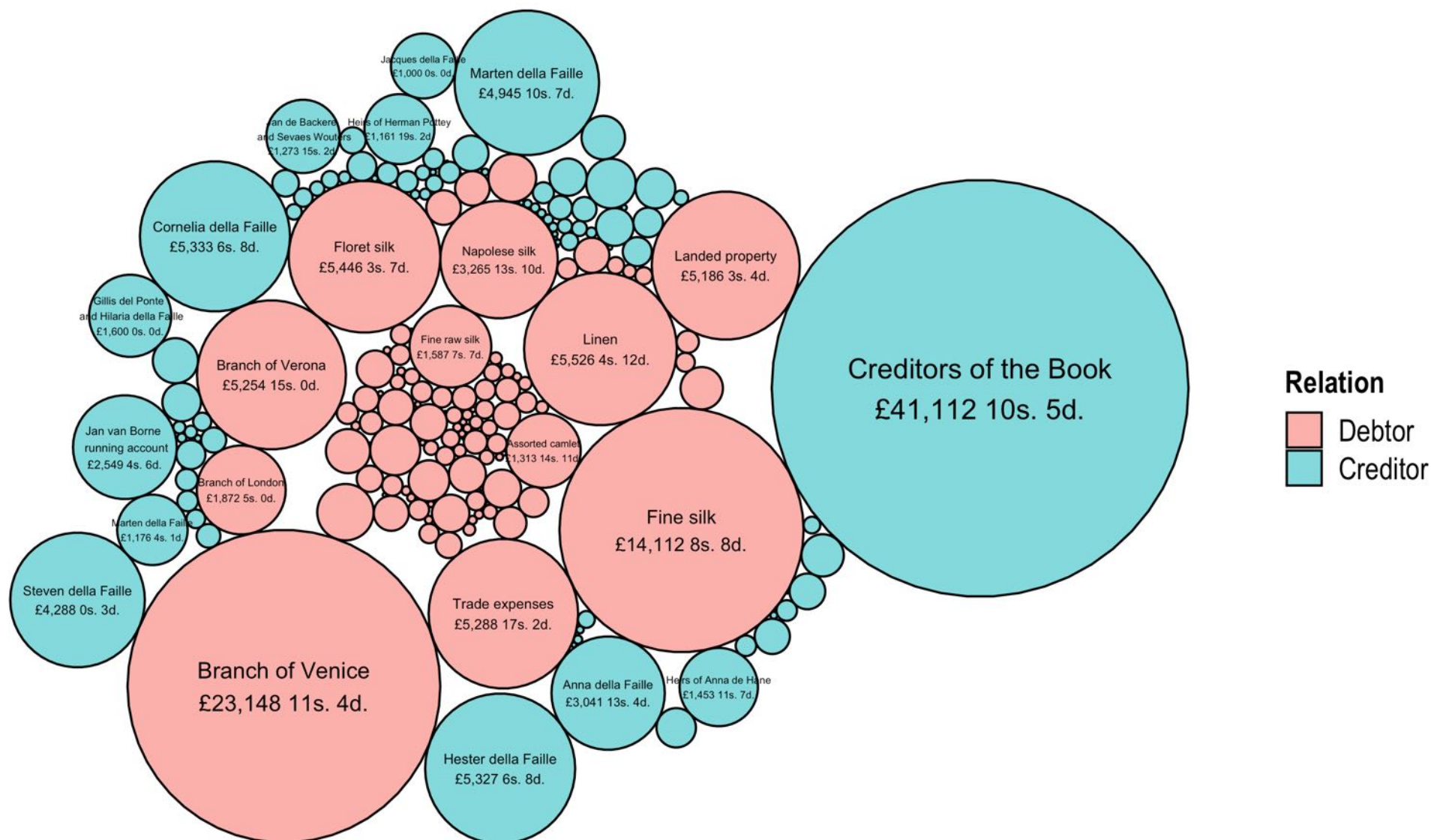
Phase 3: September to December 1594

Highlighting the inheritance of **Hester** and **Carlo**

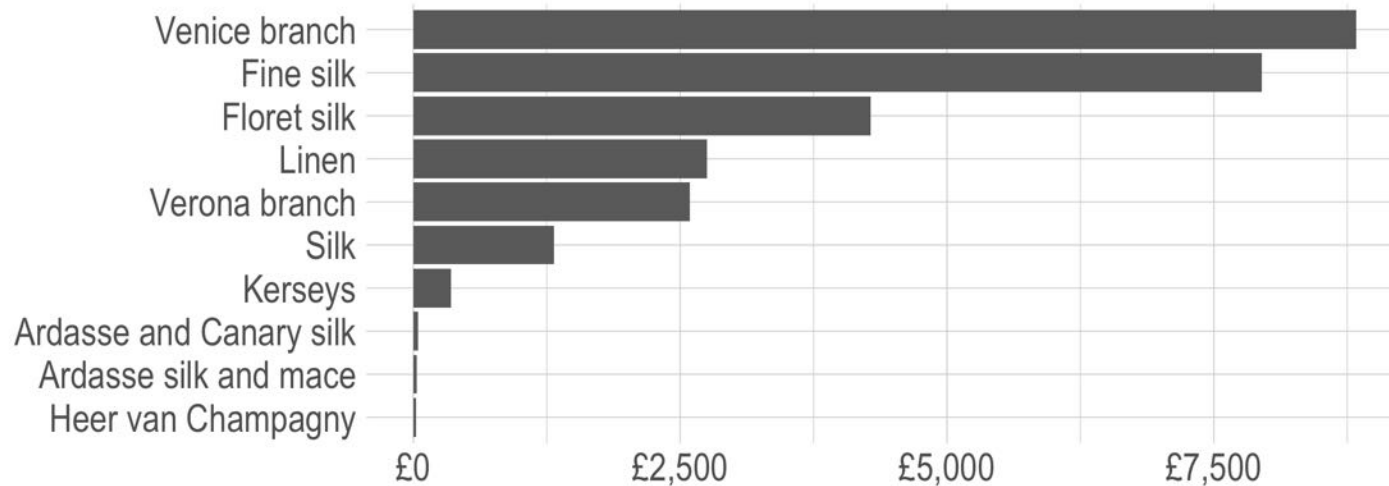


Value of accounts in the estate of Jan della Faille de Oude, 8 December 1582

Opening value of the estate: £82,813 5s. 8d.

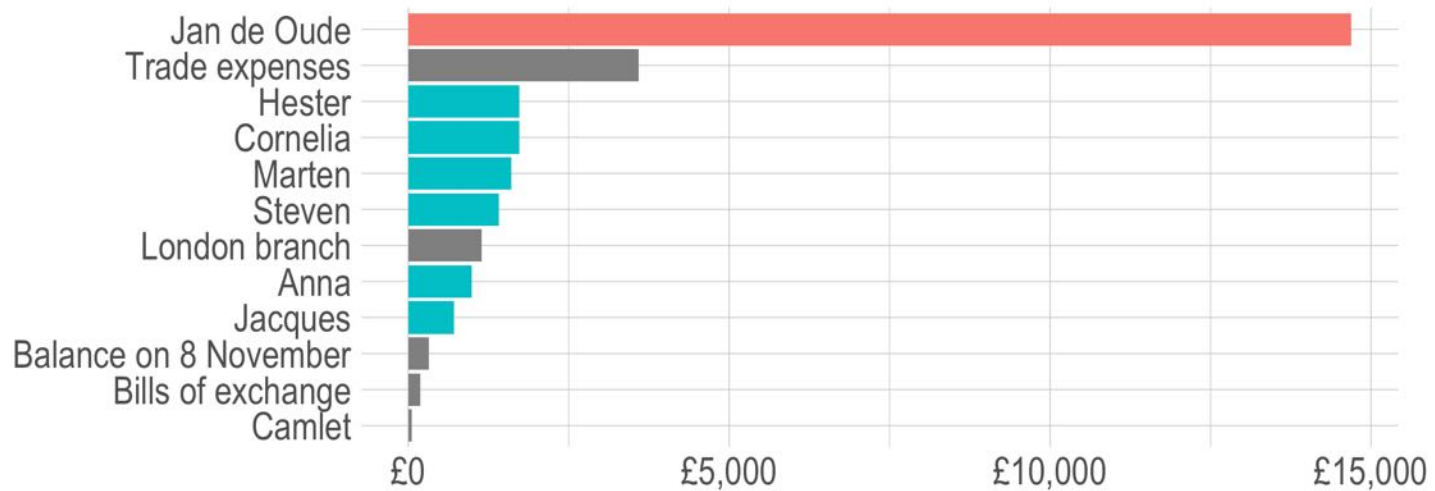


Sources of profits, 1579 to 15 Dec 1583

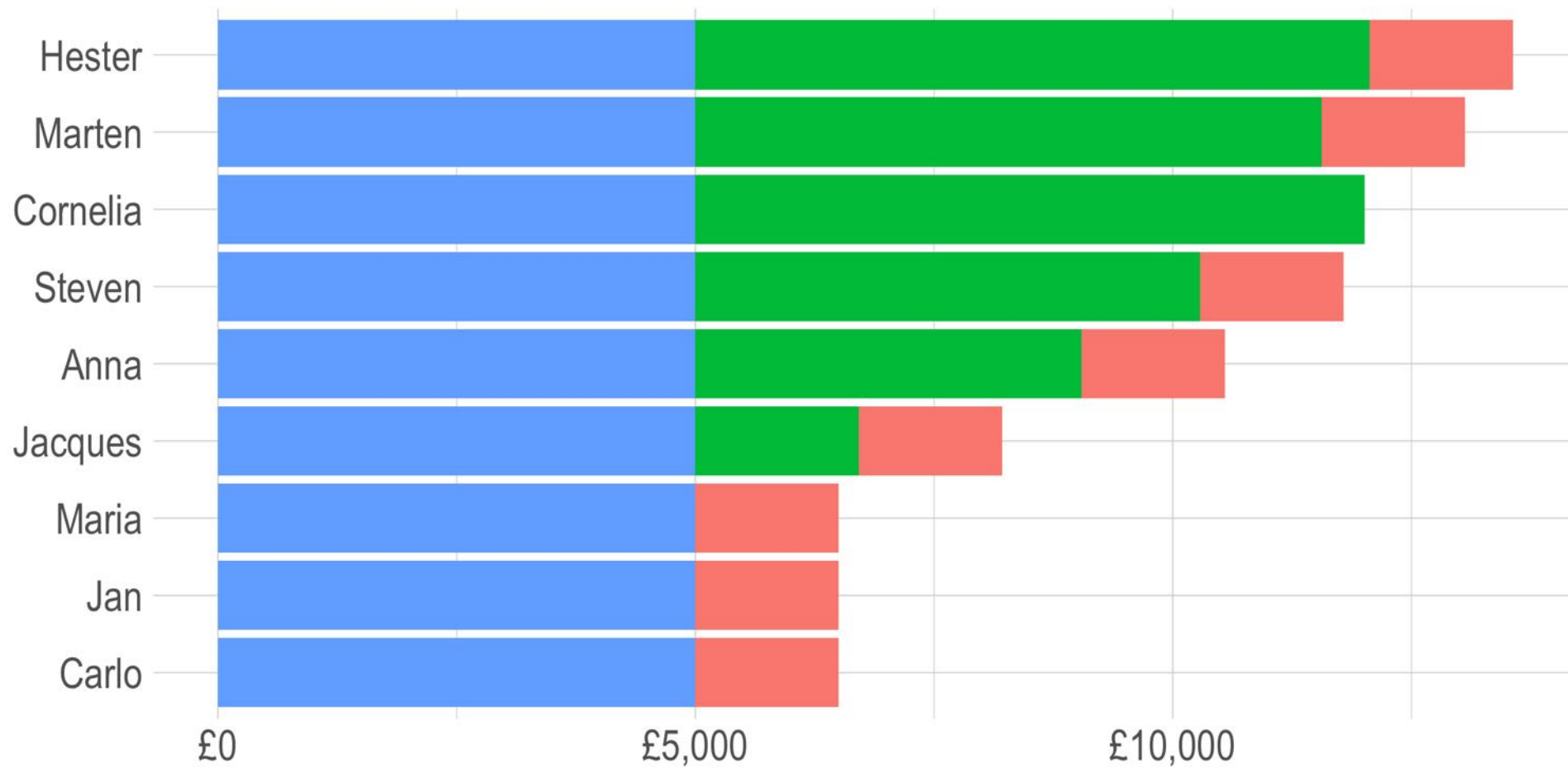


Distribution of Paternal and Maternal profits

With some expenses/losses

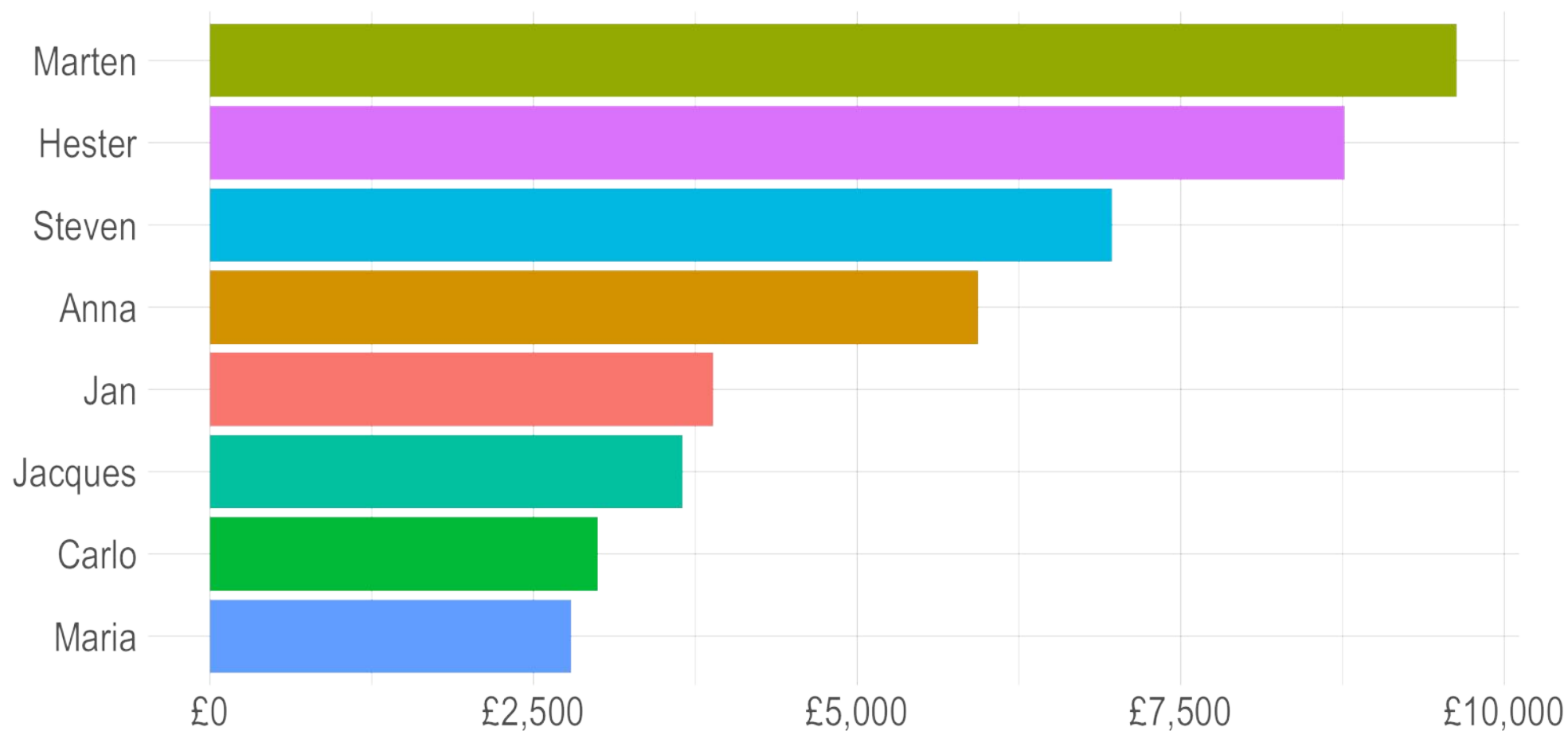


Paternal, Maternal, and Sororal inheritance on 26 Dec 1583



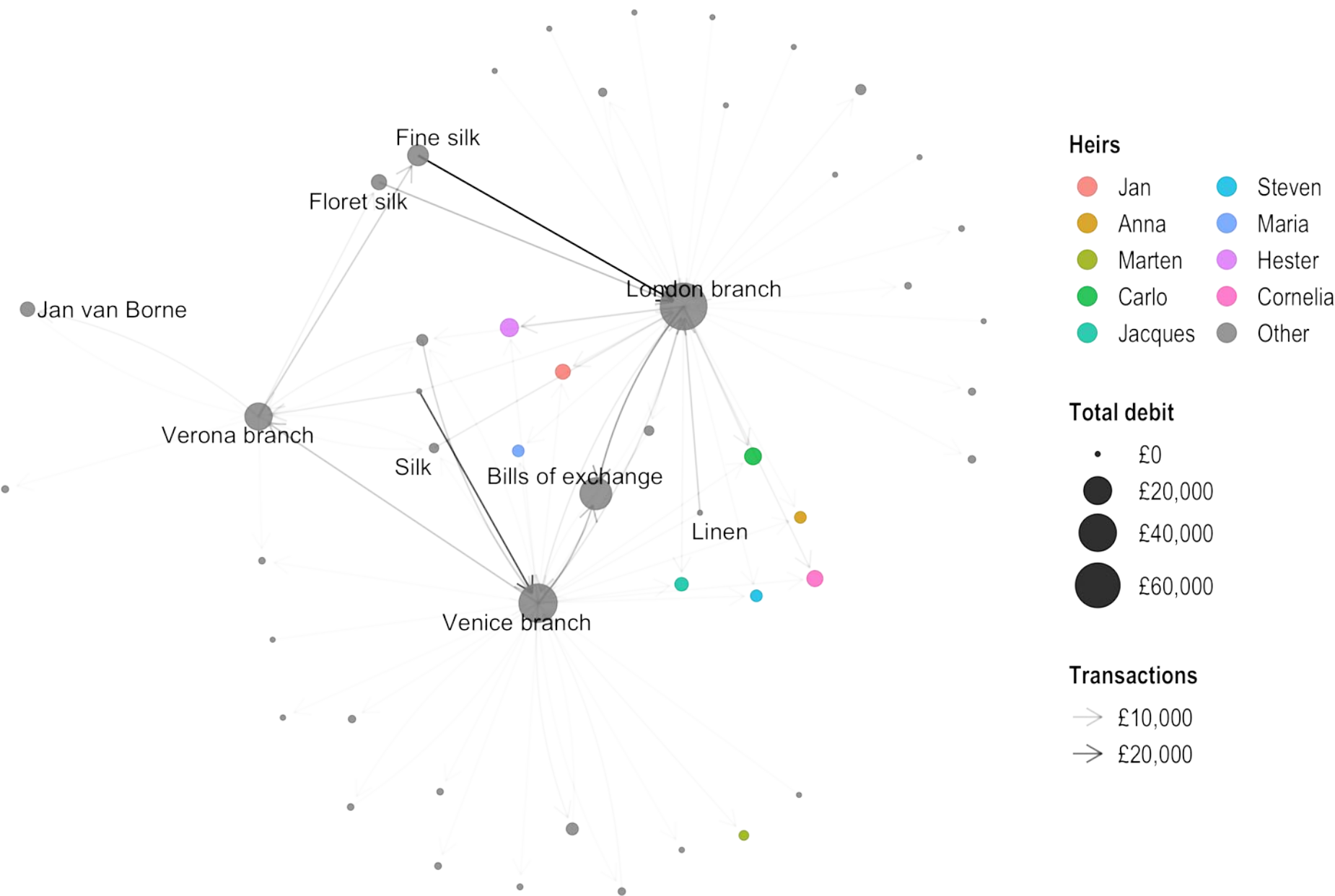
Total disbursement of inheritance

8 November 1582 to 15 March 1585



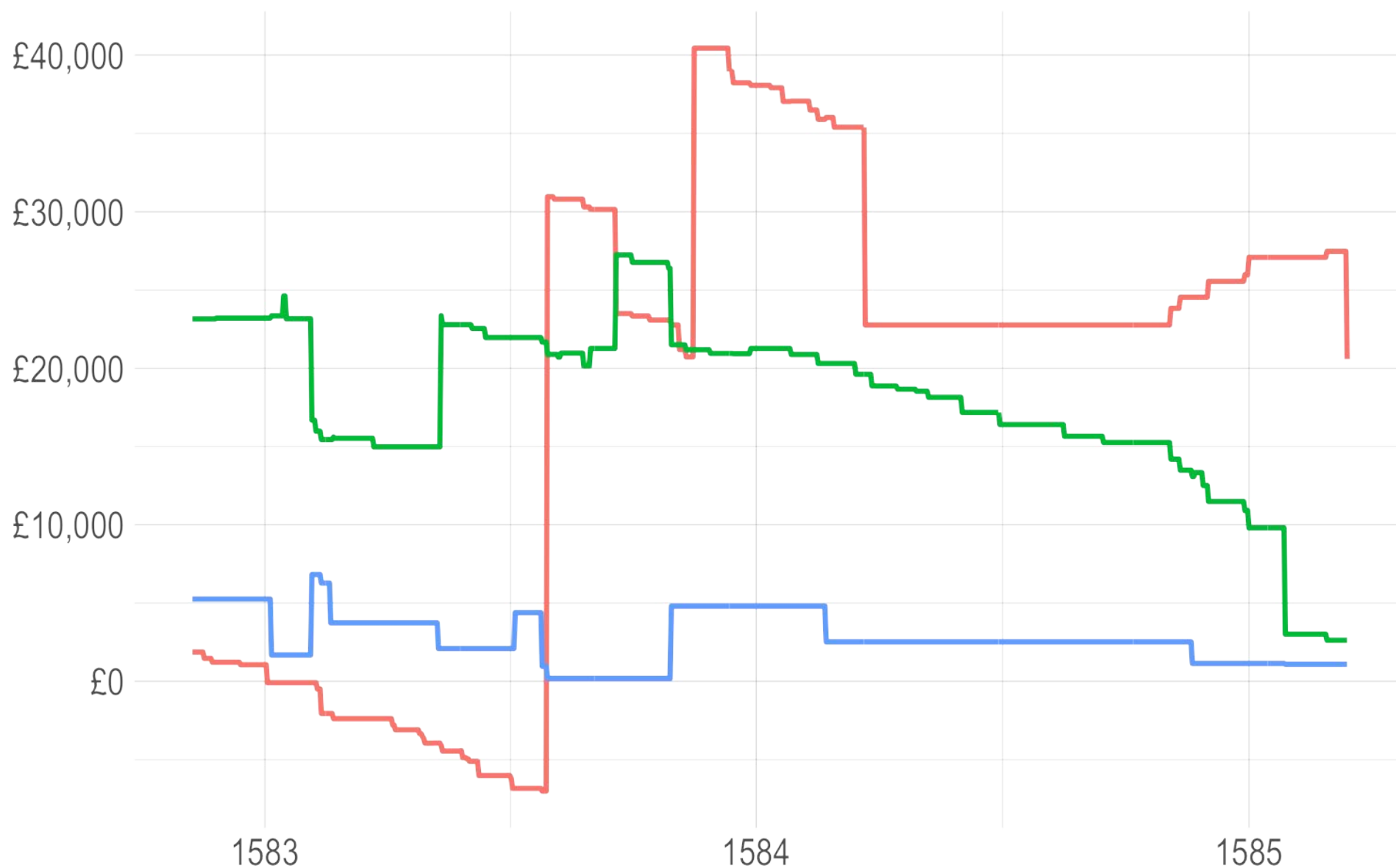
Subgraph of the branches in the trade of Jan de Oude

8 November 1582 to 15 March 1585



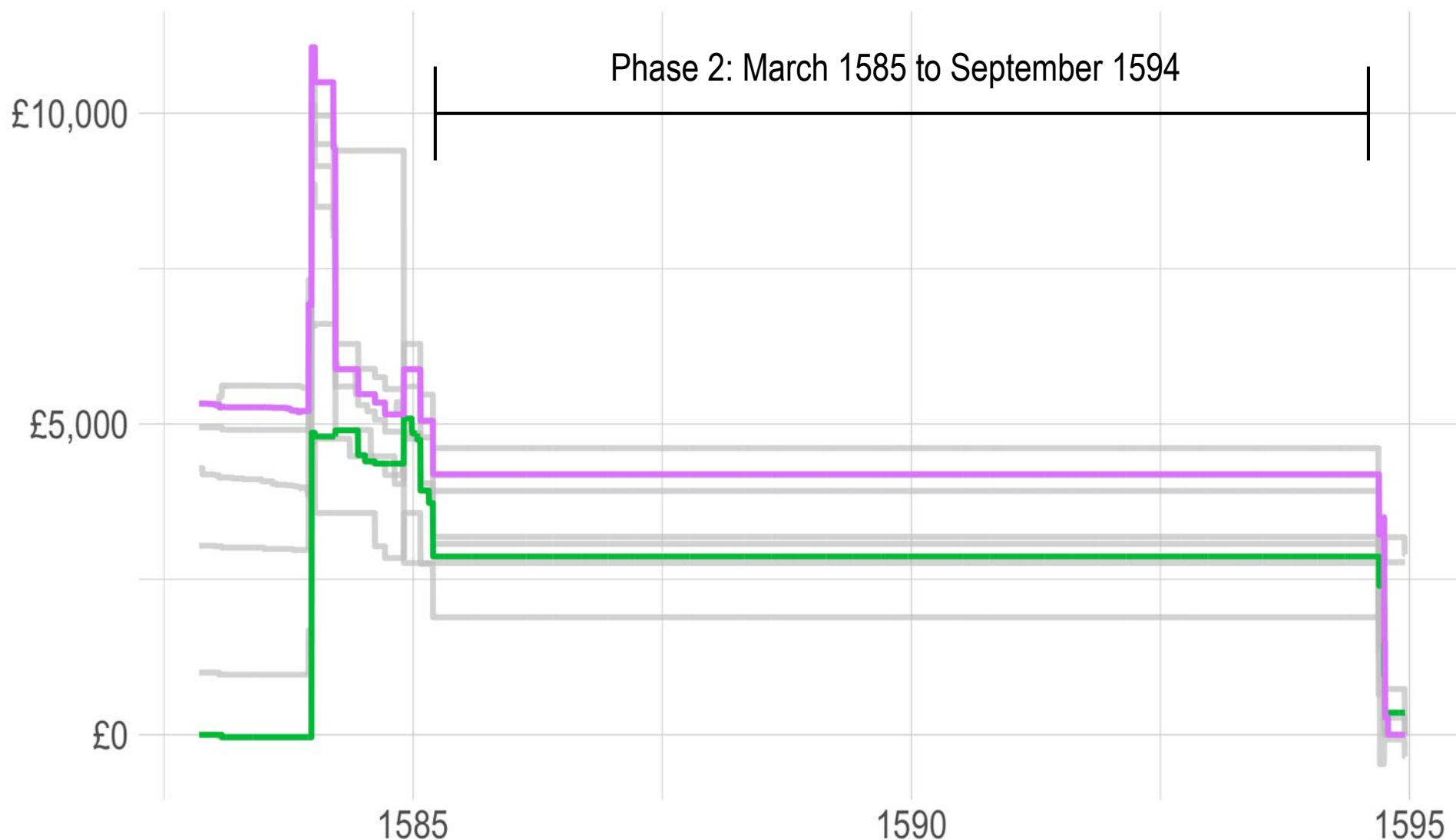
Capital held by the branches of London, Venice, and Verona

8 November 1582 to 15 March 1585

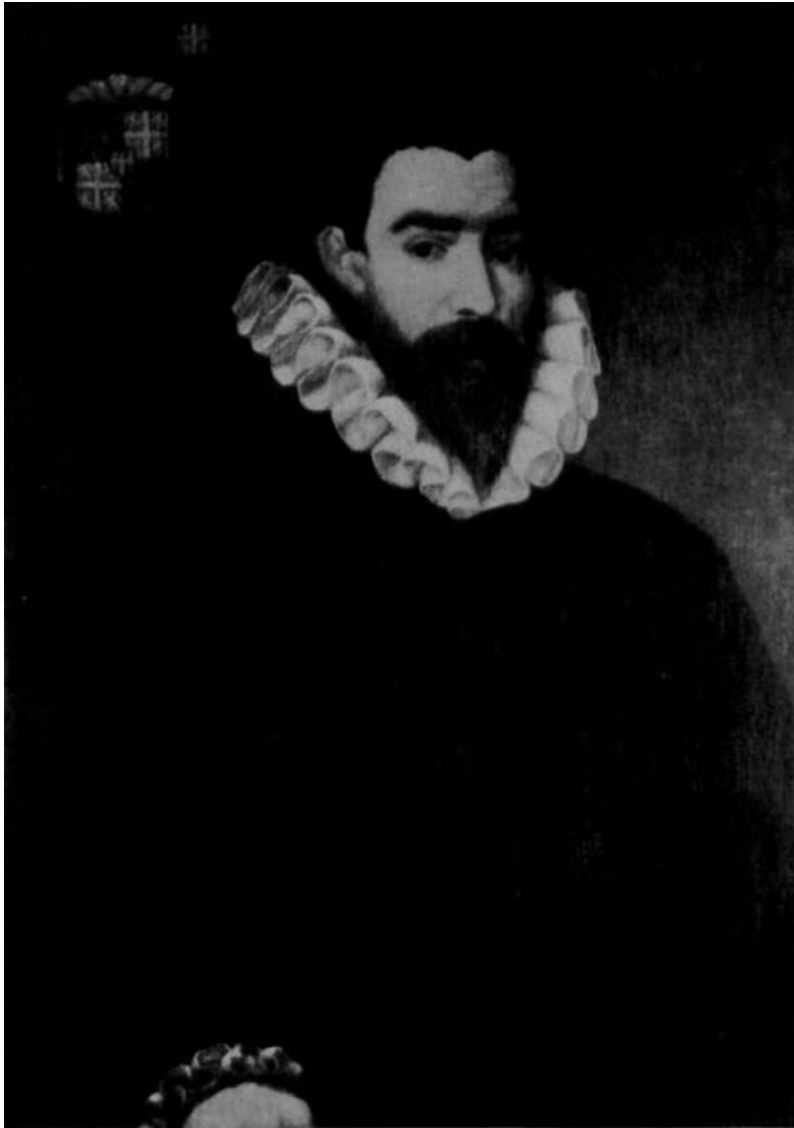


Inheritance of the heirs of Jan de Oude, 1582–1594

Highlighting the inheritance of **Hester** and **Carlo**



Marten della Faille
(1544/5–1620)

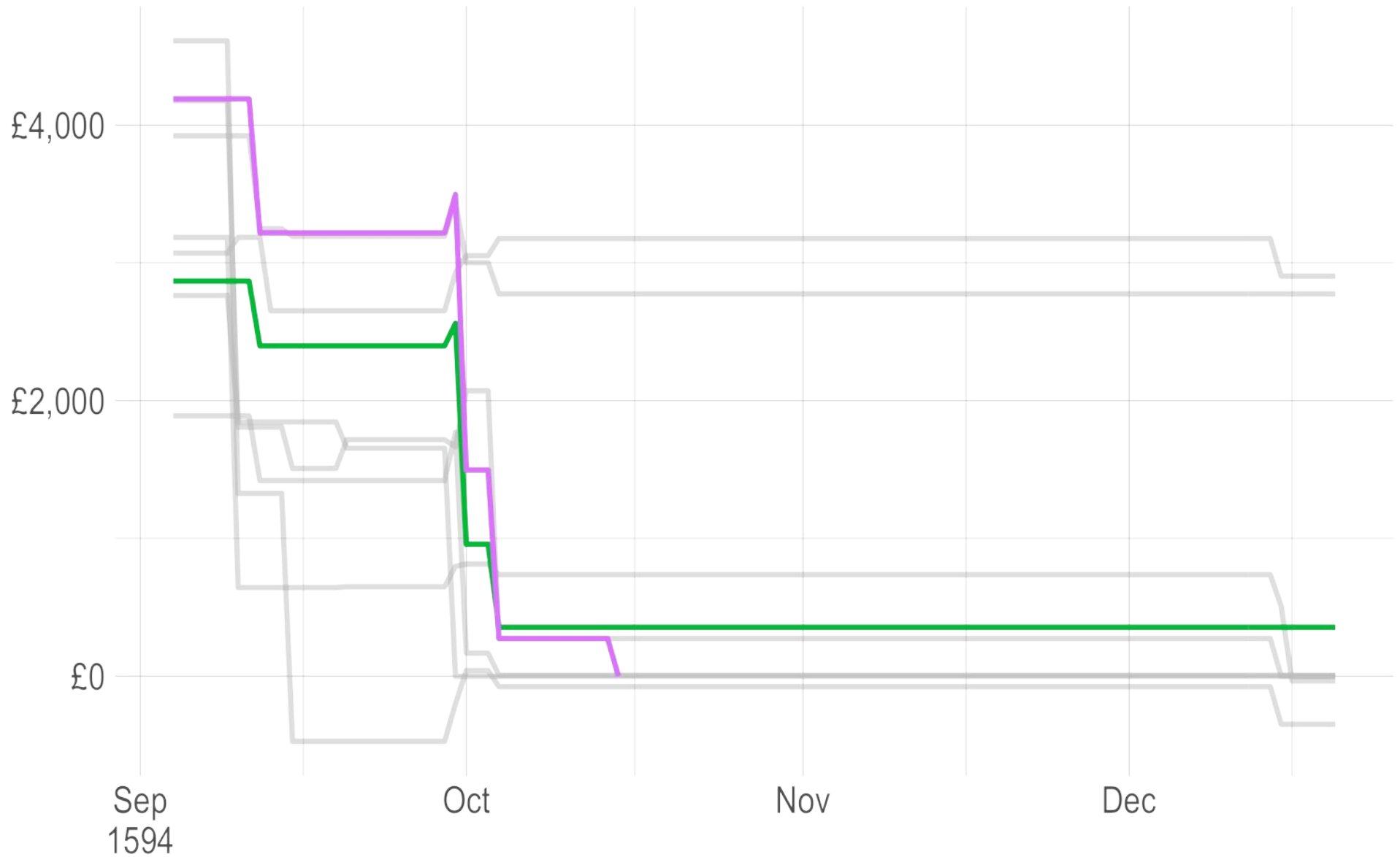


Jacques della Faille
(1549/50–1615)



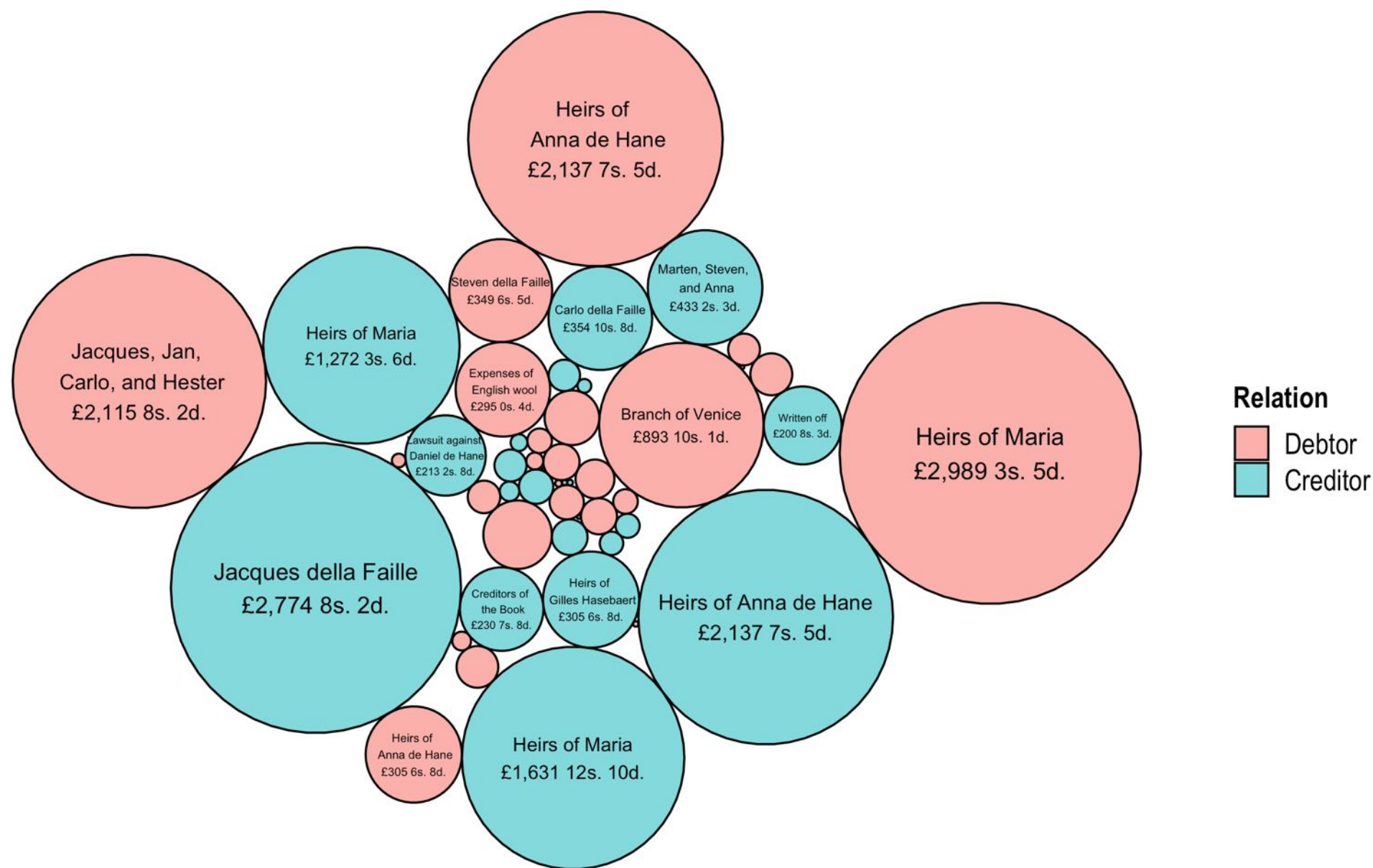
Phase 3: September to December 1594

Highlighting the inheritance of **Hester** and **Carlo**



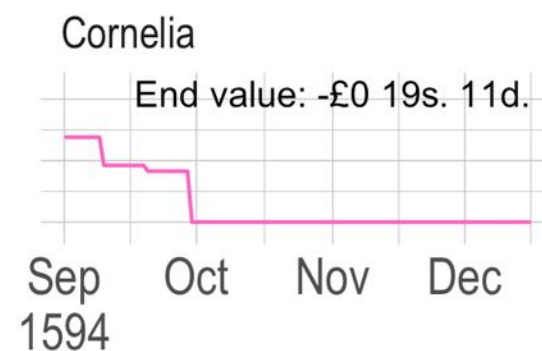
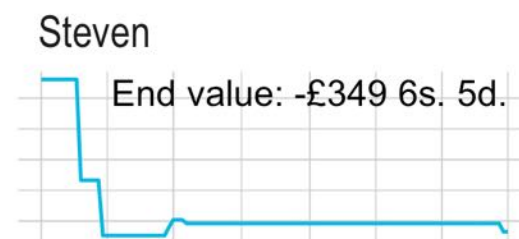
Value of accounts in the estate of Jan della Faille de Oude, 31 December 1594

Capital remaining in the estate at the close of the books: £9,768 1s. 8d.



Inheritance due to the heirs of Jan de Oude

September 1594 to 16 December 1594



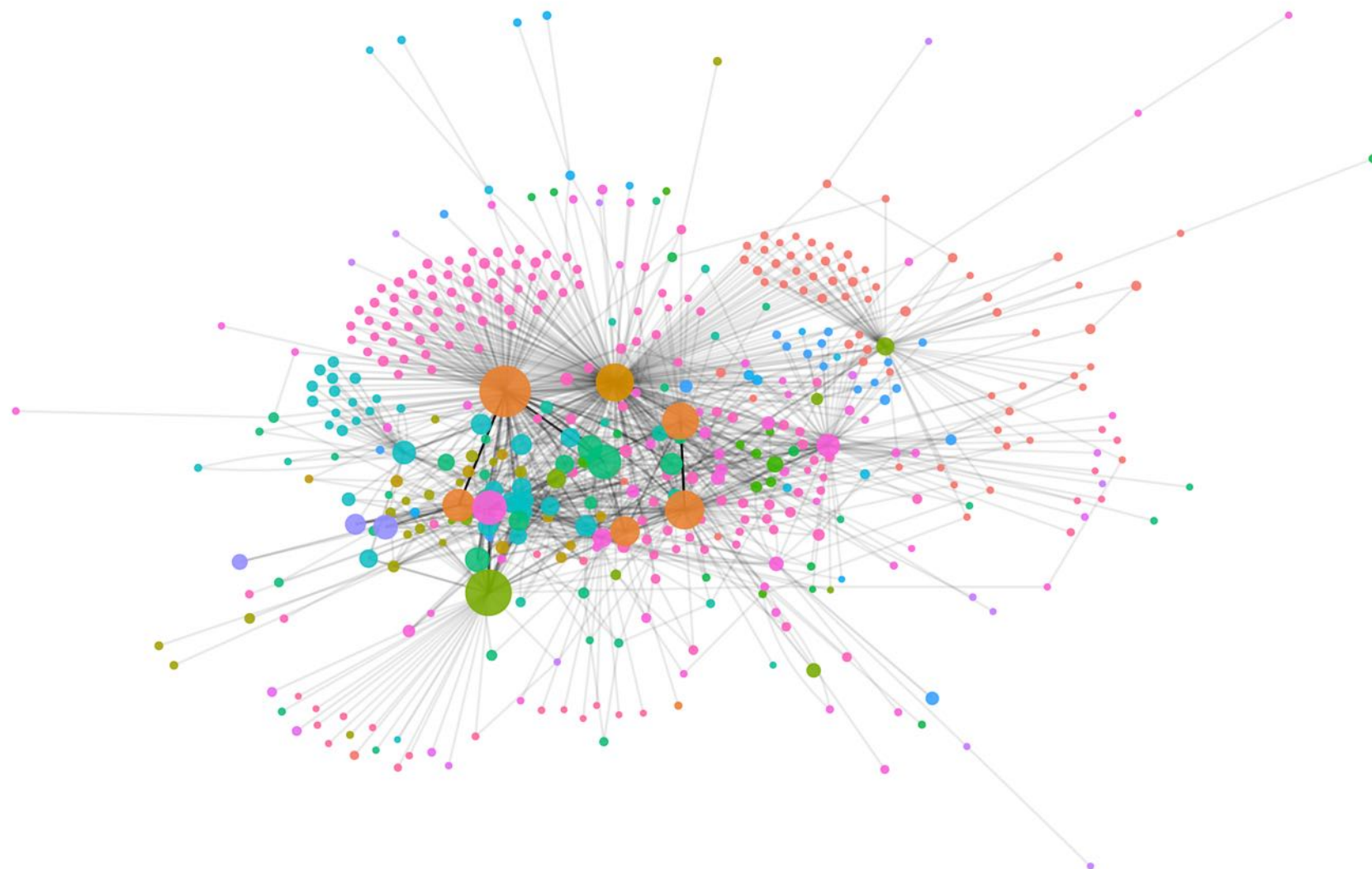
Daniel van der Meulen
(1554–1600)



Hester della Faille
(c. 1558–1643)



Estate of Jan della Faille de Oude, 1582–1594



Account types

Bequest Branch Cassa Company Erffgoed Estate Factor Giovane Goods Heir
Inheritance Kin Law Loan London Inheritance Miscellaneous Political Trade Wissel Written off